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Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordinance and Explosive Waste
Chemical Warfare Materials

ARCHIVES SEARCH REPORT

**FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK**

St. Louis, Missouri

Site Nos. B07MO0173 and B07MO0179

DECEMBER 1993

Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

2025715



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**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
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FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

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C. A vessel owned or operated by the Department of Defense.

The National Contingency Plan (NCP) was established by the Clean Water Act of 1972. The NCP has been revised and broadened several times since then. Its purpose is to provide the organizational structure and procedures for remedial actions to be taken in response to the presence of hazardous substances, pollutants, and contaminants at a site. Section 105 of the 1980 CERCLA states that the NCP shall apply to all response actions taken as a result of CERCLA requirements.

The March 1990 National Oil and Hazardous Substances Pollution Contingency Plan given in 40 CFR part 300 is the latest version of the NCP. Paragraph 300.120 states that "DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions under the jurisdiction, custody, and control of DOD."

On April 5, 1990, U.S. Army Engineer Division, Huntsville (USAEDH) was designated as the USACE Mandatory Center of Expertise (MCX) and Design Center for Ordnance and Explosive Waste (OEW). As the MCX and Design Center for OEW, USAEDH is responsible for the design and successful implementation of all Department of the Army OEW remediations required by CERCLA. USAEDH will also design and implement OEW remediation programs for other branches of the Department of Defense when requested. In cooperation with the Huntsville Division the U.S. Army Corps of Engineers St. Louis District has been assigned the task of preparing Archives Search Reports for those Formerly Used Defense Sites (FUDS) suspected of chemical warfare materials (CWM) contamination.

1.2 Subject

The Tyson Valley Powder Farm, Site No. B07MO0173, and Lone Elk County Park, Site No. B07MO0179, are located adjacent to each other in St. Louis County, Missouri. The Tyson Valley area was used in conjunction with the St. Louis Ordnance Plant, Site No. B07MO0010, (see separate ASR for this site number) for storage of ammunition and chemicals and testing of ammunition. The site was referred to as the St. Louis Ordnance Plant Magazine and Range. Located on the Powder Farm are 52 partially buried munitions storage bunkers, 3 chemical warehouse buildings, 2 burning tables, a Popping Kettle building, 10 P.E.T.N. (Pentaerythrite Tetranitrate) vaults, 4 TNT magazines, and 4 firing ranges.

1.3 Purpose

This Archives Search Report (ASR) compiles information obtained through historical research at various archives and records holding facilities, interviews with individuals associated with the site or its operations, and personal visits to the site. All efforts were directed towards determining possible use or disposal of chemical warfare materials on the site and documenting the existence of Ordnance and Explosive Waste (OEW). Particular emphasis was placed on establishing the chemical (agent), the type of munitions or container,

quantities and area of disposal. Information obtained during this process was used in developing recommendations for further actions at the site.

1.4 Scope

OEW and CWM activities occurred on most of the 2621.69 acres comprising the Tyson Valley Powder Farm. This area is now divided into three sections; West Tyson Valley, Tyson Valley (Washington University Research Center), and Lone Elk County Park. The particular areas of interest within the Research Center boundaries include the 3 Chemical Warehouses, the Popping Kettle Building area, a section of land 290 feet north of P.E.T.N. Vault No. 1, and the 2 burning tables. Based on our research, all areas were decontaminated except approximately one acre, 290 feet north of P.E.T.N. Vault No. 1. In the creek down from the Popping Kettle Building are hundreds of shell casings and several barrels containing slag from burned munitions and one with "Cyanide" on the side. Located within the Lone Elk County Park are the 4 firing ranges. There was no OEW or CWM activity which occurred in the West Tyson Valley area. The entire area was researched and the locations identified above were investigated on the site visit.

What is
OEW + CWM

2.0 Previous Site Investigations

Several INPR's, Findings of Fact, and site investigations were completed by the Corps of Engineers, Missouri River Division, Kansas City District (CEMRK). CEMRK also completed a RAC score on October 1992. All of these report basically the same findings summarized below.

DOD use began in 1941 with the acquisition of 2621.69 acres by fee and easement. In 1945, the facility was reported excess and transferred to the War Assets Administration (WAA). The Federal Farm Mortgage Corporation (FFMC) conveyed, by quitclaim deed, in 1947, to the State of Missouri, a strip of land for use as a highway. In 1950, the FFMC conveyed the remainder of the land to the county for park and recreation purposes. The Department of Army reoccupied and reacquired 2371.70 acres by fee in 1950 and 1.69 acres in easement in 1956. The balance remained under the county's jurisdiction for park and recreation purposes. Once again, the site was reported excess to GSA in 1961. In 1963, the government conveyed 1966.46 acres by fee and a 1.69 acre easement to Washington University in St. Louis City. The remaining 405.24 acres were conveyed to St. Louis County in 1964 for parks and recreation.

Identified on Washington University property were 52 partially buried munitions storage bunkers, 3 60' x 80' buildings, 1 warehouse, 25 storage/support buildings, 2 burning tables, and one Popping Kettle building.

A site visit was conducted on 10 September 1985.

Included in the INPR dated 22 October 1992 is a RAC score sheet. A RAC score of 1 was derived for this site. This score was justified due to a "... deteriorating 20mm intact cartridge in the display case at the main entrance ..."

3.0 Site and Site Area Description

3.1 Location

Tyson Valley Powder Farm is located approximately 25 miles southwest (on Highway 44) of St. Louis, Missouri, near Eureka, Missouri in St. Louis County. The total area was comprised of 2621.69 acres, approximately 4 square miles.

3.2 Past Uses

The property was initiated by the Ordnance Department to provide storage for explosives. Tyson Valley was used as a storage and testing facility for the St. Louis Ordnance Plant which manufactured small arms ammunition, 105mm projectiles, and chemicals used in tracers and incendiaries. Prior to DOD's acquisition in 1941, the property was uninhabited. Four firing ranges were used for testing ammunition. The area was declared surplus in 1945, but the U.S. reacquired 2371 acres in 1951 during the Korean War. In 1961, the area was once again declared surplus.

Not technically true

3.3 Current Uses of Site

The 2621.69 acres are divided into three major portions; Washington University Research Center, West Tyson Valley, and Lone Elk County Park. Washington University acquired 1966.46 acres in 1963 and utilizes this property as a Research Center. Located on this property is a bird sanctuary, wolf sanctuary, and various other research projects. All but 3 or 4 of the 52 bunkers and vaults are used for either storage, libraries, or laboratories. The "Popping Kettle" building was converted into a photo blind for bird watchers and the 3 chemical warehouses have been extensively used as art studios and other similar activities. The Lone Elk County Park is open to the public. Located in the park are bison, elk, deer, and several types of waterfowl. The former firing ranges are used by animals as shelter.

3.4 Map Analysis

The former Tyson Valley Powder Farm is located in Section 27 and portions of Sections 34, 33, 32, 28, 26, 23, 22, and 21 of Township 44 North and Range 4 East, at 38 Degrees 31 minutes and 30 seconds North and 90 Degrees 34 minutes and 30 seconds West.

The site was analyzed by referencing the Manchester, MO, USGS 7.5 minute quadrangle map, 1954 and photorevised in 1982. This map identifies infrastructure and topographical features with the Tyson Valley Powder Farm being referenced as the Washington University Tyson Research Center and Lone Elk County Park. The igloos and other former structures can be identified.

In 1957 the United States Defense Corporation developed a General Plot Plan, scale 1" = 400 ft, of the Tyson Area. This plan identifies buildings, infrastructure, property



FIGURE 1

TYSON VALLEY POWDER FARM
 AND LONE ELK COUNTY PARK
 ST. LOUIS COUNTY
 ST. LOUIS, MISSOURI
 DERP-FUDS# B07M00173
 DERP-FUDS# B07M00179
 VICINITY MAP

NOT TO SCALE

PROJ. DATE: DECEMBER 1993

DATE OF MAP: 1993

22-DEC-1993 10:00

SITE2SR/MAP/mo0173.dgn

boundaries, and topographic features. Located on the map are building numbers and use. Bunker/igloo storage areas, fencing, firing ranges, and tracer ranges are noted on the plan.

No other maps were available for interpretation.

3.5 Interpretation of Aerial Photography

Photo analysis and land use interpretation were performed at the site with the use of aerial photography from 1937, 1941, 1953, 1960, 1971, and 1985. The approximate negative scale of photography is as follows:

<u>Photography Date</u>	<u>Scale</u>	<u>Identifier(s)</u>	
		<u>Source</u>	<u>Frame(s)</u>
14 Aug 1937	1" = 2,000'	SURDEX	TQ-TR-8/861-862
2 Aug 1941	1" = 2,000'	SURDEX	TQ-10B/8-8-12
13 Aug 1953	1" = 2,000'	SURDEX	TQ-2K-14
12 Feb 1960	1" = 2,000'	SURDEX	146/119
19 Feb 1960	1" = 2,000'	SURDEX	147/52-53
3 Mar 1971	1" = 2,000'	SURDEX	622/178
12 Mar 1971	1" = 2,000'	SURDEX	623/027
4 May 1971	1" = 2,000'	SURDEX	TQ-2MM/250-251
26 Jan 1985	1" = 3,000'	SURDEX	Line R-1057/5 Line S-1057/4-5 Line T-1057/5-6

The Manchester, MO, USGS 7.5 quadrangle map, 1954 and photorevised in 1982, was used as the reference for the photography.

No photography was available for interpretation prior to 1937. The 1937 aerial photography indicates no activity. The facility had not been constructed. The area is a mixture of farmland, trees, and several structures. By 1941, large areas have been cleared of timber, warehouses erected, and igloos constructed. In 1953 the facility is in operation. Igloos, warehouses, and infrastructure are in place. Between 1953 and 1971 the area changes very little. Tree growth is apparent. The tracer range and "popping kettle" area are visible. There is no indication of ordnance disposal.

On the 1960 aerial photography there is no apparent evidence of disposing chemical ordnance, however the "popping kettle" and associated buildings are present and are so noted on the 1957 General Plot Plan, (described in the Map Analysis) as a contaminated area. The "popping kettle" is located in the northern portion of the site, near the St. Louis and San Francisco Railroad. There are approximately sixty-seven igloos, tracer ranges and firing ranges still present. The infrastructure and topographic features are also visible.

Between 1960 and 1985 the area underwent some change. Some igloos have been razed and other buildings are non-existent. There is additional tree growth in the "popping kettle" area. The firing and tracing ranges are still visible, but are not in use. The infrastructure is present, however some roads have been overgrown with timber and brush. By 1971 a road was established on the eastern portion of the site. This road's direction is north-south in a stair-step pattern. Finally, a reservoir has been created in portions of the former tracer ranges.

3.6 Demographics of the Area

3.6.1 Center of Activity

Tyson Valley Powder Storage Area and Lone Elk County Park are located in the vicinity of Eureka, Missouri. This city has numerous centers of activity such the public library, Eureka Hills branch of the St. Louis County library system; Lioness Park, Legion Park; Bowlby Park; Hilltop Park; and Drewel Park. Six Flags Over Mid-America is a major theme park located in the vicinity of Eureka.

3.6.2 Population Density

CITY: Eureka

COUNTY: St. Louis

AREA:	8 sq.mi	506 sq. mi.
POPULATION:	4,683	993,529
POPULATION DENSITY:	585 persons/sq. mi.	1,963 persons/sq. mi.

Population and area are based on the U.S. Department of Commerce, Bureau of the Census, 1990 statistics, and telephone interviews.

3.6.3 Type of Businesses

A review of both telephone interviews and County Business Patterns (1990) assisted in developing a business profile of the area. Numerous businesses, light industry, retail, and service, are located in the Eureka area. In addition, there are several "fast" food and convenience businesses located near the interstate.

3.6.4 Type of Industry

The largest employers are Six Flags Over Mid-America, tourism and entertainment; Rockwood School District, education; and Roto Die, molding and tooling.

3.6.5 Type of Housing

Housing in the City of Eureka is composed of both single and multi-family housing.

3.6.6 New Development in the Area

Development is associated with residential areas and convenience businesses.

3.6.7 Cross-Section of Population

The percent of those under the age of 18 is 30%, over 65 years is 12%. The median age is 32. Approximately 98.8% of the population is white, .8% hispanic, .2% black, .1% American Indian or Eskimo and .1% Asian or Pacific Islander. There are approximately 1,601 housing units with a median dollar value of \$74,900. The work force of St. Louis County is broken down into the following: manufacturing, 13.9%; non-manufacturing, 81.8%; agriculture, 1.5%; and other non-agriculture 2.8%.

4.0 Physical Characteristics of the Site

4.1 Geology/Physiography

The Tyson Valley Powder Farm and Lone Elk County Park are located within the Salem Plateau Section of the Ozark Plateau physiographic province. Bedrock is at or near the surface and consists predominantly of sandstone, limestone, and dolomite of Cambrian and Ordovician ages (UMRBCC, 1970). With some minor local structural features modifying, the regional dip of the bedrock in St. Louis County is an average of 55 feet per mile to the northeast into the Illinois basin. (Bauhof, 1979). See section 4.4, Groundwater, for a more detailed description of the Cambrian-Ordovician Bedrock.

4.2 Soils

The site soils consist of moderately sloping to steep, well to excessively drained soils which formed on limestone and loess. Those soils found on the lower part of side slopes have a surface which is brown, friable clayey silt with some organics, and a subsoil of brown silty clay with some organics.

Those soils found on the side slopes, and on narrow, rounded ridges differ in that they tend to be cherty or "flaggy" clayey silts and silty clays. Chert may be present in varying amounts and fractured limestone bedrock can occur from 14-17 inches below the ground surface.

Permeability for both types of soils is moderately rapid with a combined rate of 0.6-2.0 in/hr and runoff is very rapid. In areas where soils tend to lie shallow on the bedrock, the soils are acidic, posing a moderate risk of corrosion to uncoated steel, and a low risk of corrosion to concrete. If soils are of greater depth, the soils are generally neutral to alkaline, and the risk of corrosion to uncoated steel is low and to concrete is moderate. The shrink swell potential of these soils ranges from low to moderate and the susceptibility to sheet and rill erosion by water is high, whereas the wind erodibility is from slight to none (Benham, 1982).

4.3 Hydrology

Tyson Valley County Park and Lone Elk County Park are side by side and located near Eureka, Missouri in western St. Louis County. The site area is steep and hilly and is drained by tributaries of the Meramec River. The elevations of the area range between a high of about 800 feet NGVD and a low of about 400 feet NGVD along the Meramec River.

The Meramec River flows in a generally easterly direction and empties into the Mississippi River just south of St. Louis, Missouri. The city of Eureka, Missouri is located at mile 34.0 on the Meramec River. The high stage on the Meramec River at Eureka is 42.8 feet recorded on December 6, 1982. This stage is equivalent to an elevation of about 447.0 feet NGVD. The bluff line which sets the outer limits of the flood plain is between 440.0 and 450.0 feet

NGVD.

4.4 Ground Water

Large supplies of ground water are available from wells and springs in the Cambrian-Ordovician bedrock aquifer. Moderate to large supplies are also available from sand and gravel aquifers along the Meramec River.

Extensive and relatively permeable aquifers in the Meramec River Basin are reflected in the relatively high dry-weather flows of the Meramec and its tributaries. Groundwater in limestone and dolomite moves through cracks, fractures and other openings, and the permeability of the rock depends on the size, number, and interconnection of these openings. Because limestone and, to a lesser degree, dolomite, are slightly soluble in water, these openings become enlarged by solution, thereby increasing the permeability of the rock. The thick section of fractured dolomite and limestone, the great relief, and the relatively high rainfall in this area have produced an extensive system of solutionally enlarged openings through which groundwater freely circulates.

A potential ground-water pollution problem exists in the cavernous Cambrian-Ordovician aquifer of Missouri. Because water moves rapidly through large joints, fractures, and solution channels in the rocks, pollutants washed into the aquifer from the land surface may not be filtered out of the ground water and may move for very long distances (UMRBCC, 1970).

4.5 Weather

Saint Louis, Missouri is located at the confluence of the Missouri and Mississippi Rivers and near the geographical center of the United States. Saint Louis feels the effects of the warm moist air from the Gulf of Mexico and the cold air masses from Canada. The conflict along the frontal zones of these invading air masses provide a variety of weather conditions.

Winters are brisk with temperatures dropping to zero or below generally only two or three days per year. Snowfall averages about 18 inches per season. Temperatures of 90 degrees or higher occur about 35-40 days a year. The prevailing wind direction is south for May through November and northwest to west northwest for December through April.

Precipitation averages about 34 inches per year. The winter months are the driest while the spring months of March through May are the wettest. Thunderstorms occur between 40 and 50 days and usually a few can be severe, causing hail and damaging winds. Tornadoes have produced damage and loss of life in the Saint Louis area.

Climatological data for the area are summarized in TABLE 4-1. Data were collected at the National Weather Service meteorological station at Saint Louis, Missouri.

CLIMATOLOGICAL DATA FOR
SAINT LOUIS, MISSOURI
TABLE 4-1

Month	Temperature (F)		Average Monthly Mean	PRECIP. Average (in.)	Wind Velocity (mph)	Wind Direction
	Min.	Max.				
Jan	19.9	37.6	28.8	1.72	10.6	NW
Feb	24.5	43.1	33.8	2.14	10.8	NW
Mar	33.0	53.4	43.2	3.28	11.8	WNW
Apr	45.1	67.1	56.1	3.55	11.4	WNW
May	54.7	76.4	65.6	3.54	9.5	S
Jun	64.3	85.2	74.8	3.73	8.8	S
Jul	68.8	89.0	78.9	3.63	8.0	S
Aug	66.6	87.4	77.0	2.55	7.6	S
Sep	58.6	80.7	69.7	2.70	8.1	S
Oct	46.7	69.1	57.9	2.32	8.9	S
Nov	35.1	54.0	44.6	2.53	10.1	S
Dec	25.7	42.6	34.2	2.22	10.4	WNW
Annual	45.3	65.5	55.4	33.91	9.7	S

Source: NOAA 1992. Local Climatological Data of Saint Louis, Missouri. ISSN 0198-2907

4.6 Ecology

The information provided for this site has been compiled from the U. S. Fish and Wildlife Service, the Missouri Department of Conservation.

The U.S. Fish and Wildlife Service lists the peregrine falcon (Falco peregrinus), running buffalo clover (Trifolium stoloniferum), and pink mucket pearly mussel (Lampsilis abrupta) as Federally protected species known to occur in the area of the Tyson Valley Powder Farm (currently the Washington University Tyson Research Center). Candidate species also found in the vicinity include: Crystal darter (Ammocrypta asprella), snuffbox (Epioblasma triquetra), scaleshell (Leptodea leptodon), salamander mussel (Simpsonaias ambigua), and cerulean warbler (Dendroica cerulea). The U.S. Fish and Wildlife Service also indicated the presence of several wetland habitats occurring within the area of interest.

Based on information provided by the state, the following state endangered, rare, or watch list species are known to occur on or in the vicinity of the project site: Wood frog (Rana sylvatica), rock-pocketbook (Arcidens confragosus), spectaclecase (Cumberlandia monodonta), snuffbox, pink mucket pearly mussel, scaleshell, sheepnose (Plethobasus cyphus), salamander mussel, a broom-rape (Orobanche ludoviciana), elephant-ear (Elliptio crassidens crassidens), ebonyshell (Fusconaia ebena), royal catchfly (Silene regia), and crystal darter.

No additional information on the occurrence of rare or endangered species or natural communities is known at this time. This does not mean that other state or federally-listed species may not be present within the areas of interest. An on site inspection by appropriate state and federal personnel may be necessary to verify the presence, absence or location of listed species, or natural communities if remedial action is recommended as part of the final ASR.

5.0 Real Estate

5.1 DOD Ownership

The Department of Defense purchased 2621.69 acres of land in June 1941 to provide storage and test range facilities for the St. Louis Ordnance Plant. Located on the property are 52 storage bunkers, 10 P.E.T.N. vaults, 4 T.N.T. magazines, 3 chemical warehouses, and 4 firing ranges (600, 1500, 2250, and 4800 feet). Also constructed during the war was a Popping Kettle Building and 2 burning tables. Stored at the facility were powder, priming, pyrotechnic and incendiary chemicals, small arms ammunition and 105mm projectiles; all which were produced at the St. Louis Ordnance Plant. The Tyson Valley was under DOD's jurisdiction during WWII and the Korean War.

5.2 Present Ownership

The 2621.69 acres is divided among several owners. Washington University owns most of the land, 1966.46 acres, and used the property for research and other activities. St. Louis County owns property known as Lone Elk County Park, located east of and adjacent to Washington University Research Center. Located west of and adjacent to the Research Center is an area referred to as West Tyson. The State of Missouri constructed Highway 44 to the south of the subject property.

5.3 Significant Past Ownership other than DOD

Tyson Valley was declared surplus in 1945 and was reported to the War Assets Administration. The area was disposed of, in 1950, to St. Louis County for park and recreation purposes. In 1951, the Department of Army reoccupied most of the property, approximately 2371 acres, for use during the Korean War. The remainder stayed under the jurisdiction of St. Louis County. In 1961, the property was again declared surplus and was transferred to GSA. GSA, in turn, transferred the property to the Department of Health, Education, and Welfare (DHEW). DHEW conveyed 1966.46 acres to Washington University in 1963 and the remaining 405.24 acres to St. Louis County for park and recreation purposes in 1964.

6.0 OEW/CWM Site Analysis

6.1 Historical Summary of OEW/CWM Activities

6.1.1 General

Tyson Valley Powder Farm, located approximately 25 miles southwest of St. Louis, Missouri, near Eureka, was used as a storage area in conjunction with the production of small arms ammunition at the St. Louis Ordnance Plant. The storage area was situated on 2621.69 acres of land purchased by the Federal Government in May and June of 1941. On 12 December 1945, Tyson Valley Powder Farm was declared surplus to the needs of the Department of Defense and was reported to the War Assets Administration (WAA). The area was disposed of by quitclaim deed on 23 June 1950 to St. Louis County for park and recreational purposes. The Department of the Army, however, exercised its rights under a recapture clause of the deed to reacquire 2371 acres of Tyson Valley on 5 September 1951, during the Korean War. The remaining 249.99 acres remained under the ownership of St. Louis County. (Department of the Army 1992).

On 27 October 1961, all government-owned land comprising the Tyson Valley Powder Farm was declared excess and reported to the General Services Administration (GSA). The GSA assigned the property to the Department of Health, Education and Welfare (DHEW). DHEW, in turn, conveyed 1966.46 acres to Washington University, in St. Louis City, by quitclaim deed on 2 October 1963. DHEW conveyed the remaining 405.24 acres to St. Louis County by quitclaim deed on 3 February 1964. (Department of the Army 1969).

6.1.2 Brief History

Tyson Valley Powder Farm was initiated by the Ordnance Department to provide storage of powder, priming, pyrotechnic and incendiary chemicals and to provide tests range facilities for small arms ammunition and 105mm projectiles produced at the St. Louis Ordnance Plant. With this in mind, 52 storage igloos, 10 P.E.T.N. vaults, 4 TNT magazines, 3 chemical warehouses and 80 other buildings were constructed. In addition to this, 4 firing ranges of 4800, 2250, 1500 and 600 feet were constructed. The total costs of acquisition and construction of Tyson Valley Powder Farm was \$3,199,650, with \$152,698 representing the cost of the land. (War Assets Administration 1947).

In addition to 105mm projectiles, munitions listed as being shipped, stored and tested at Tyson Valley included: (United States Army Material Commands 1942).

.30 cal.: Ball
 Armor Piercing
 Tracer M-1 & M-2
 Incendiary

.50 cal.: Ball
 Armor Piercing
 Tracer M-2
 Armor Piercing Incendiary
 Incendiary

*What are
OEW/CWM's*

In the 1960s, all government-owned land comprising Tyson Valley Powder Farm was declared surplus and disposed of to the aforementioned parties. Today, former Tyson Valley Powder Farm lands consist of Interstate 44, Tyson Valley Lone Elk Park, Tyson Valley Wolf Sanctuary, Washington University Research Center and West Tyson Park.

6.1.3 OEW/CWM Activities

Numerous documents located during the archives search indicated that there was a potential for OEW/CWM contamination at Tyson Valley Powder Farm. Maps indicated that a chemical storage area was used to hold chemicals contained in the incendiary and tracer elements in .30 cal. and .50 cal. bullets manufactured at the St. Louis Ordnance Plant. In addition, there were 10 vaults that housed PETN, 4 magazines that housed TNT, a 105mm storage area, and 52 igloos that stored ammunition, smokeless powder and other hazardous materials. The U.S. Atomic Energy Commission stored material in five unspecified igloos. (War Assets Administration 1947).

Documents also indicated that live and scrap .30 cal. and .50 cal. ammunition was buried in shallow trenches at Tyson Valley in the 1940s. (War Assets Administration 1947). A letter from the Office of the Chief of Engineers, dated 6 March 1947, stated that several thousand spent cartridges and approximately 1000 live rounds of .30 cal. and 680 live rounds of .50 cal. ammunition had been unearthed. The ammunition, however, had been treated with mercury before its burial, which caused the ammunition to decompose at an accelerated rate. The ammunition in question was destroyed by fire by a bomb and shell disposal team.

This same team stated that the target butts at Tyson Valley had been decontaminated and declared the entire powder farm to be free of all duds and explosives, except for a one-acre area 290 feet north of PETN vault #1, where more ammunition was believed to be buried. (Office of the Chief of Engineers 1947).

Records also indicated that field artillery may have used two unspecified bunkers for target practice. (Department of the Interior 1963).

A burning ground, located on a 150 x 300-foot area was also situated on the storage facility's land. The area in question contained two steel tables separated and surrounded by eight-foot earth berms. (Department of Defense n.d.).

There is no evidence of chemical warfare materials ever being used or stored at Tyson Valley, other than those mentioned above.

6.2 Records Review

The plan of action for the records search was to investigate regional archives and records centers due to their ease of access. This was followed by research conducted at the national level. The final phase of the research methodology was to locate and review local records in

the St. Louis and Kansas City areas.

1. National Archives, Washington, D.C.

RG 156 - Records of the Office of the Chief of Ordnance. No pertinent information found.

2. National Archives and Records Agency, Suitland Facility, Suitland, MD.

RG 156 - Records of the Office of the Chief of Ordnance. No pertinent information found.

RG 175 - Records of the Chemical Warfare Service. No information found.

RG 338 - Records of United States Army Commands, 1942-. No information found.

3. National Personnel Records Center, St. Louis, MO.

RG 342 - Records of the Us Air Force Commands, Activities and Organizations. No information found.

RG 338 - Records of the United States Army Commands, 1942-. No information found.

4. National Archives - Central Plains Region, Kansas City, MO.

RG 121 - Records of the Public Buildings Service. No pertinent information found.

RG 156 - Records of the Office of the Chief of Ordnance. Maps.

RG 270 - Records of the War Assets Administration. Real Property Disposal Files, historical documents and maps.

RG 291 - Records of the Property Management and Disposal Service. Real Property Disposal Files, property descriptions, historical documents and maps.

5. Federal Records Center, Kansas City, MO.

RG 121 - Records of the Public Buildings Service. No pertinent information found.

5/15/01

Requested:

- Site Plan - Storage Area - ⁶³ Lyson Valley St. Louis Ordnance Plant
- Lyson Valley Park Map
- Real estate from War Dept (Project Ownerships)
- Space & Volume Tabulation - County Storage Area (United States Ordnance Co.)

RG 291 - Records of the Property Management and Disposal Service. Real Property Disposal Files. *Was information found?*

6. National Archives - Southwest Region, Fort Worth, TX.

RG 103 - Records of the Farm Credit Administration. No information found.

RG 121 - Records of the Public Buildings Service. No information found.

RG 270 - Records of the War Assets Administration. No information found.

7. U.S. Army Corps of Engineers, Kansas City District, Kansas City, MO.
Inventory Project Reports, historical documents, real estate documents and maps.

6.3 Summary of Interviews

Interviews and telephone conversations relating to the Tyson Valley Powder Farm are located in Appendix E. Richard Coles, Director, Tyson Research Center, indicated that all igloos and vaults had been decontaminated and cleaned. All but three or four igloos and bunkers are used for storage. Concerning the storage activities at five unspecified igloos by the U.S. Atomic Energy Commission, Coles revealed that the Office of Radiation Safety tested all storage facilities and found them to be free of radioactive contamination. Coles further indicated that there were no records or signs of 105mm shells ever being fired at the facility, however, he did state that there were several spent casings lying near the Popping Kettle building.

6.4 Site Inspection

The site inspection team contacted Richard Coles to discuss the FUD site and to conduct an inspection of a portion of the former powder farm owned by Washington University. Coles took the team on a tour of the area. There were no signs of OEW/CWM contamination at the former burial area near igloo #52, nor at the One-acre area north of PETN vault #1. The area containing the burning tables were also free of debris and contamination.

The three 80 x 60-foot chemical warehouses, used to store chemicals contained in the incendiary and tracer elements of ammunition produced at the St. Louis Ordnance Plant, were found to have been cleaned thoroughly. According to Coles, the chemical buildings had been used extensively over the years.

An area of concern to Coles was the Popping Kettle building on the north side of the former powder farm. A dry creek bed, located 50 meters from the building, was found to contain approximately 2,000 spent .30 and .50 cal. casings and slugs. In addition, several rusted barrels containing slag from burned small arms ammunition from the Popping Kettle were

found in the creek bed. The creek bed occasionally fills with water and flows off the property. The potential that live ammunition can be found in the creek bed exists.

The team also inspected the firing ranges located in Lone Elk Park. There were no reports or signs of OEW/CWM contamination.

7.0 Evaluation of Contamination

Records indicate that OEW and CWM activities were conducted at Tyson Valley Powder Farm, Site Number B07M00173, and Lone Elk County Park, Site Number B07MO0179. A combined RAC score of 3 was derived for both sites.

The subject site was used in conjunction with the St. Louis Ordnance Plant for storage of small arms ammunition, 105mm projectiles, powder, priming, pyrotechnic and incendiary chemicals, and for testing of ammunition on firing ranges. Located at Tyson Valley were 52 storage bunkers, 10 P.E.T.N. vaults, 4 TNT magazines, a Popping Kettle Building, 3 Chemical Warehouses, and 4 firing ranges in lengths of 600 feet and over. Documents state ball, armor piercing, tracers and incendiaries for both .30 and .50 cal and armor piercing incendiary .50 cal munitions were stored at the Tyson Valley facility. Also stored in 5 unspecified igloos, was material from the U.S. Atomic Energy Commission.

Documents indicate that live and scrap small arms ammunition were buried in shallow trenches in the 1940's. In 1947, a document stated several thousand spent cartridges and a thousand live .30 cal rounds and 680 live .50 cal rounds were unearthed. This ammunition, destroyed by fire by a bomb and shell disposal team, had been treated with mercury to accelerate the decomposition. This same report certified, "... entire area with the exception of one acre located 290 feet NE of PETN Vault No. 1 ... free of all duds and explosives and considered safe for all purposes." If this ammunition was coated with mercury, it is highly probable decomposition has occurred.

While on the site visit, all possibly contaminated areas were investigated. An Interview with Mr. Richard Coles, Director of Washington University Research Center, stated that all bunkers except three or four have been used for storage, libraries, and laboratories and the chemical warehouses have been used extensively as art studios and similar activities. Mr. Coles also revealed that the Office of Radiation Safety tested all storage facilities utilized by the U.S. Atomic Energy Commission and found them to be free of contamination. There was no indication of contamination in the area around the burning tables, the chemical warehouses, or storage bunkers.

One area identified by Mr. Coles on the site visit, indicated a possible burial site between a creek and 2 warehouses in the vicinity of the PETN Vaults. He had heard rumors that office equipment was buried in this location. A rusty substance was draining into the creek suggesting this possibility.

Located near the Popping Kettle Building is an area of concern. Discovered in the creek bed were hundreds of shell casings and several barrels partially buried into the side of the sloped side of the creek. One of these barrels was labeled "Cyanide". Most of the barrels contained residue from burned bullets. It is possible live ammunition is located in this area either on the surface or just below. This creek flows into the Meremac River.

APPENDIX A

REFERENCES

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX A

REFERENCES

A-1 INVENTORY PROJECT REPORT (INPR)

A-1.1 Department of the Army

1991. Site Survey Summary Sheet, Former Tyson Valley Powder Farm, Missouri, dated 24 June 1991.

A-1.2 Department of the Army

1992. Inventory Project Report, Former Tyson Valley Powder Farm, Missouri, dated 12 November 1992.

A-2 HISTORICAL REFERENCES (Quoted in the Report)

A-2.1 United States Army Material Commands

1942. Ordnance War Administration History, Series II; The Ordnance Organization in World War II, Study No. 11; Facilities, Monograph No. 1; GOCO Facilities Directory.

A-2.2 War Assets Administration

1947. Letter from W.H. Howard, Acting Deputy Regional Officer, Real Property Disposal, to A.J. Wilson, Deputy Director, Property Management Division, dated 5 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

A-2.3 Office of the Chief of Engineers

1947. Letter from Captain Asa B. Luter, Commanding Officer, to the Office of Division Engineer, Omaha, NE, dated 6 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX A

REFERENCES

**A-2 HISTORICAL REFERENCES (Quoted in the Report)
(CONTINUED)**

A-2.4 War Assets Administration

1947. Letter from W.H. Howard, Acting Deputy Director, Office of Real Property Disposal, to Mr. Thomas Drumm, Jr., Deputy Director, Office of Real Property Disposal, Washington D.C., dated 24 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

A-2.5 Department of the Interior

1963. Report on Application by County of St. Louis, Missouri for Transfer of Surplus Real Property, dated 16 September 1963.

A-2.6 Department of the Army

1969. Letter from J.B. Lowe, Chief, Planning & Control Branch, Real Estate Division, to Sam Parker, Regional Director, Property Management and Disposal Service, Kansas City, MO, dated 26 March 1969. Record Group 291, Box 9, National Archives Central Plains Region, Kansas City, MO.

A-2.7 Ora G. Hafley

1981. Letter to Washington University Research Center, Tyson Valley, Missouri, concerning burial of shell casings, dated May 11, 1981.

A-3 DEMOGRAPHICS REFERENCES

A-3.1 Eureka Chamber of Commerce 314-938-6062

A-3.2 Eureka City Hall 314-938-5233

A-3.3 U.S. Department of Commerce. Bureau of the Census. Missouri. 1990

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
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FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
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DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX A

REFERENCES

A-4 GEOLOGICAL AND SOILS REFERENCES

- A-4.1 Benham, Ken E., Soil Survey of St. Louis County and St. Louis City, Missouri, USDA, Soil Conservation Service, in cooperation with Missouri Agricultural Experiment Station, 1982.**
- A-4.2 Bauhof, Frederick C., Geology, Seismicity, and Anticipated Earthquake Ground Motions in Creve Coeur Quadrangle, St. Louis County, Missouri, 1979.**
- A-4.3 Upper Mississippi River Basin Coordinating Committee, Upper Mississippi River Comprehensive Basin Study, 1970.**

APPENDIX B

ACRONYMS

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179 .

APPENDIX B

ACRONYMS

AAF	Army Air Field
AGO	Adjutant General's Office
ASR	Archive Search Report
AST	Aboveground Storage Tank
CE	Corps of Engineers
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEHND	Corps of Engineers, Huntsville Division
CEMRD	Corps of Engineers, Missouri River Division
CEMRK	Corps of Engineers, Kansas City District
CEMP	Directorate of Military Programs (Wash DC)
COE	Chief of Engineers
CON/HTRW	Containerized/Hazardous, Toxic, and Radioactive Waste
CWM	Chemical Warfare Material
CWS	Chemical Warfare Service
DA	Department of the Army
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DHEW	Department of Health, Education and Welfare
DOD	Department of Defense
EOD	Explosives Ordnance Disposal
EPA	Environmental Protection Agency
FDE	Findings and Determination of Eligibility
FFMC	Federal Farm Mortgage Corporation
FUDS	Formerly Used Defense Sites
GSA	General Services Administration
HTRW	Hazardous, Toxic, and Radioactive Waste
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
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FOR
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DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX B

ACRONYMS

MCX	Mandatory Center of Expertise
NOFA	No Further Action
OEW	Ordnance and Explosive Waste
PETN	Pentaerythrite Tetranitrate
RAC	Risk Assessment Code
RI/FS	Remedial Investigation and Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SLD	St. Louis District, Corps of Engineers
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USAEDH	U.S. Army Engineer Division, Huntsville, AL
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WAA	War Assets Administration
WD	War Department
WNRC	Washington National Records Center

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
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FOR
TYSON VALLEY POWDER FARM
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DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDICES

- A. REFERENCES**
- B. ACRONYMS**
- C. REPORTS/STUDIES/LETTERS/MEMORANDUMS**
- D. HISTORICAL PHOTOGRAPHS (NOT USED)**
- E. INTERVIEWS**
- F. NEWSPAPERS/JOURNALS (NOT USED)**
- G. PRESENT SITE PHOTOGRAPHS**
- H. HISTORICAL MAPS/DRAWINGS (NOT USED)**
- I. OEW RISK ASSESSMENT CODE FORM**
- J. REPORT DISTRIBUTION LIST**
- K. ARCHIVES ADDRESSES**

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

**ORDNANCE AND EXPLOSIVE WASTE
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FOR
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ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

C-1 INVENTORY PROJECT REPORT (INPR)

C-1.1 Department of the Army

1991. Site Survey Summary Sheet, Former Tyson Valley Powder Farm, Missouri, dated 24 June 1991.

C-1.2 Department of the Army

1992. Inventory Project Report, Former Tyson Valley Powder Farm, Missouri, dated 12 November 1992.

C-2 HISTORICAL REFERENCES (Quoted in the Report)

C-2.1 United States Army Material Commands

1942. Ordnance War Administration History, Series II; The Ordnance Organization in World War II, Study No. 11; Facilities, Monograph No. 1; GOCO Facilities-Directory.

C-2.2 War Assets Administration

1947. Letter from W.H. Howard, Acting Deputy Regional Officer, Real Property Disposal, to A.J. Wilson, Deputy Director, Property Management Division, dated 5 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

C-2.3 Office of the Chief of Engineers

1947. Letter from Captain Asa B. Luter, Commanding Officer, to the Office of Division Engineer, Omaha, NE, dated 6 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

**ORDNANCE AND EXPLOSIVE WASTE
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APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

**C-2 HISTORICAL REFERENCES (Quoted in the Report)
(CONTINUED)**

C-2.4 War Assets Administration

1947. Letter from W.H. Howard, Acting Deputy Director, Office of Real Property Disposal, to Mr. Thomas Drumm, Jr., Deputy Director, Office of Real Property Disposal, Washington D.C., dated 24 March 1947. Record Group 270, Box unlabeled, National Archives Central Plains Region, Kansas City, MO.

C-2.5 Department of the Interior

1963. Report on Application by County of St. Louis, Missouri for Transfer of Surplus Real Property, dated 16 September 1963.

C-2.6 Department of the Army

1969. Letter from J.B. Lowe, Chief, Planning & Control Branch, Real Estate Division, to Sam Parker, Regional Director, Property Management and Disposal Service, Kansas City, MO, dated 26 March 1969. Record Group 291, Box 9, National Archives Central Plains Region, Kansas City, MO.

C-2.7 Ora G. Hafley

1981. Letter to Washington University Research Center, Tyson Valley, Missouri, concerning burial of shell casings, dated May 11, 1981.

C-3.1 SITE INSPECTION SAFETY PLAN

C-3.2 SITE VISIT TRIP REPORT

**C-4. ADDITIONAL REPORTS, STUDIES, LETTERS, AND MEMORANDUMS, NOT
OFFICIALLY INCLUDED IN THE BODY OF THE REPORT**

APPENDIX C-1.1

**Report, subject: Site Survey Summary Sheet for DERP-FUDS No. B07MO017300,
The Former Tyson Valley Powder Farm, Missouri,
dated 24 June 1991**

and

**CEMRK-ED-S Findings of Fact,
dated 10 September 1985**

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. B07M0017300
THE FORMER TYSON VALLEY POWDER FARM, MISSOURI
24 JUNE 1991

SITE NAME: The former Tyson Valley Powder Farm is owned by Washington University of St. Louis.

LOCATION: St. Louis County, Missouri (see site map enclosed).

SITE HISTORY: Department of Defense (DOD) use began in 1941 with the acquisition of 2,621.69 acres by fee and easement. The Army constructed facilities for storage and testing of ammunition and the storage of chemicals and other wartime supplies. The site was reported excess in 1945, then reactivated in September of 1951 and released from the recapture rights in June 1955. The site was once again reported excess to the General Services Administration (GSA) in 1961 and the majority of the site was transferred to Washington University of St. Louis, Missouri.

The following is a list of the areas of concern as identified in the June 1989 Confirmation Study.

a. **Tyson Valley Powder Farm Buildings:** On Washington University's (WU) property there are 52 partially buried 2,000 square foot munitions storage bunkers, three 60' X 80' brick buildings, one 60,000 square foot warehouse and approximately 25 storage/support buildings.

b. **Burning Grounds:** On a plot of land approximately 150 by 300 feet are located two steel tables separated and surrounded by 8 foot berms. The tables are constructed of 3 inch steel plate and are about 5' X 12' X 1' with a 5" drainage hole.

c. **Popping Kettle Building:** One 10' X 30' X 10' wood framed galvanized metal building with a concrete foundation.

d. **Wooded Drainage Ravine:** This water drainage creek or ravine drains into the Meramec River. In and around the ravine are approximately 20 exposed drums, one of which is marked "Hazardous Cyanide Waste". Additionally, hundreds of 30 and 50 caliber brass shell casings were found on the ground, but these are believed not to be hazardous.

SITE VISIT: A site visit was conducted on 10 September 1985, by Charles Adkins and Art Collins, CEMRK-ED-S. They spoke with Washington University's Director of the site, Dr. Richard W. Coles. Dr. Coles expressed that discretion be used when visiting the site, as not to alarm the public. The site is very close to the former Times Beach, Missouri (a highly publicized dioxin hazardous waste site).

CATEGORY OF HAZARD: HTW

PROJECT DESCRIPTION: There is one proposed project at the site. Based on the contamination summary of the confirmation study performed in 1989, a RI/FS is recommended at the four areas of concern mentioned above.

AVAILABLE STUDIES AND REPORTS: The Engineering Report (Site Investigation) prepared by Metcalf & Eddy Engineers, dated June 1989 and subsequent contamination summary prepared by the Kansas City District dated 20 December 1989 is on file.

PA POC: Dan Ahern, at 816-426-2608 or FTS 867-2608 is the point of contact for this matter.

2raft
DEFENSE ENVIRONMENTAL RESTORATION ACCOUNT

FINDINGS OF FACT AND DETERMINATION

OF

DEPARTMENT OF DEFENSE RESPONSIBILITY

TYSON VALLEY POWDER FARM

ST. LOUIS COUNTY, MO.

PROJECT NO. 807M0017300

FINDINGS OF FACT

1. Synopsis of Proposed Project: On 10 September 1985, Charles J. Adkins and Art Collins, MRKED-S, performed an onsite investigation of the subject project and identified the following facilities. (See attachment for location of the site.)

a. Tyson Valley Powder Farm Buildings: On the property currently owned by Washington University there exists fifty-two (52) partially buried 2,000 sq. ft. munitions storage bunkers, three (3) 60- by 80-foot brick buildings, one (1) 60,000 sq. ft. warehouse, and approximately twenty-five (25) additional assorted buildings. (See attachment for a listing of the structures and their location.)

b. Burning Grounds: A plot of land approximately 150 by 300 feet. On this ground are located two (2) steel tables separated and surrounded by 8-foot earth berms. The tables are constructed of 2- to 3-inch steel plate and have approximate dimensions of 5 by 12 feet, sitting 1 foot above the ground. The tables have a 5-inch drainage hole in the bottom of the table.

c. Popping Kettle Building: One (1) approximately 10- by 30- by 10-foot wood frame, galvanized metal building having a cement foundation. The structure of this building has been altered by the present owner.

d. Wooded Drainage Ravine: Located approximately 150 feet northeast of "popping kettle" structure. This water drainage creek or ravine drains into the Meramac River. In the ravine and around the near vicinity are 15-20 exposed drums, one of which is marked "Hazardous Cyanide Waste." Also, hundreds of 30 caliber brass casings were found on the ground. No further site history or information is known.

2. In May and June of 1941, the Government acquired fee title to 2,620 acres of land, by condemnation, for the Tyson Valley Powder Farm in St. Louis County, Missouri. A 1.69-acre easement was also acquired for a transmission line by Easement Deed dated 3 August 1942. The facility was developed for storage of ammunition, chemicals and other wartime supplies as well as used for testing certain types of ammunition. On 12 December 1945, the installation was determined to be excess to military requirements and all land and improvements were transferred to the War Assets Administration for disposal. By a Quitclaim Deed dated 25 September 1947, the Federal Farm Mortgage Corporation conveyed to the State of Missouri, acting by and through the State Highway Commission of Missouri, a strip of land across sections 26, 27, 32, 33, 34 and 35 for use as a highway. By Quitclaim Deed dated 23 June 1950, the Federal Farm Mortgage Corporation, acting for the General Services Administration, successor in function to the War Assets Administration, conveyed the remainder of the installation, including all improvements except a small amount of railroad trackage which was removed from the site, to the county of St. Louis, to be used for park and recreational purposes. The deed of conveyance provided, among other things, the right of reentry by the United States, and full unrestricted use of the facilities during any national emergency. On 5 September 1951, the Department of the Army exercised its right of reentry and use, and reoccupied the Tyson Valley Powder Farm until

2,371.70 acres were reacquired in fee and a 1.69-acre easement was reacquired by Special Warranty Deed and Easement Deed dated 16 January 1956. The balance of the original acquisition remained in St. Louis County's ownership and utilized for parks and recreation. This land was released from the recapture rights, which had been provided for in the original deed of 23 June 1950, by a Release executed by the United States dated 2 June 1955.

3. The Department of the Army utilized the subject installation in conjunction with the St. Louis Ordnance Plant, which was one of the principal plants for the production of small arms ammunition. Tyson Valley Powder Farm was specifically used for the storage of propellant powder, priming, pyrotechnic and incendiary chemicals and to provide test range facilities on which proof firing of small arms ammunition was conducted. Construction of improvements first took place 26 May 1941 through 12 December 1945 and consisted of igloos, magazines and storage vaults, roads, fences, sewers, railroads, concrete pipe culvert, water, sewage and electrical supply facilities. At the time Tyson Valley was reoccupied in 1951, all improvements were in a general rundown condition. Upon occupancy of the property the Government expended \$193,725.38 in rehabilitating igloos and vaults, buildings, roads, bullet traps and replacing railroad facilities. In addition, improvements were constructed from 1951 through 1961 and included two warehouses, storage tank, railroad and other facilities relative to storage. On 19 January 1959, a right-of-way easement was granted to the State of Missouri. Indianapolis Grain Warehouse Corporation entered into a lease with the United States commencing 1 October 1960, for general commercial warehousing purposes. The lease involved 5 acres of land, two single story warehouses, railroad sidings and docks.




4. Inasmuch as the installation was no longer required for use by the Department of the Army it was reported excess to GSA on 27 October 1961. By Quitclaim Deed dated 2 October 1963, (copy attached) the United States of America acting by and through HEW conveyed 1,966.46 acres of fee to the Washington University, St. Louis, Missouri. The deed contained requirements for consent prior to disposal; recapture rights; that for a period of 20 years from the date of the deed the property was to be utilized continuously for educational purposes; and if all conditions, reservations or restrictions were not met the installation would revert back to the Government. By a Grant of Easement dated 10 December 1963, (copy attached) the Government conveyed the 1.69-acre easement to the Washington University. The remaining 405.24 acres were conveyed to the county of St. Louis, Missouri, by Quitclaim Deed dated 3 February 1964. The deed contained the provision that for a period of 20 years from the date of conveyance the property was to be used for parks and recreation. The deed also contained requirements for consent prior to disposal; recapture rights and reversions for noncompliance with deed conditions.

5. Extenuating Circumstances and Other Considerations: Information gathered as a result of the onsite investigation revealed that items in paragraph 1 were caused by DOD operations. Available guidance for determining DOD responsibility indicates that items a and c of paragraph 1 are not eligible under DERP because of beneficial use to the owner. Furthermore, the owner does not want any of these facilities (items a & c) removed. Items b and d of paragraph 1 would qualify for inclusion in the DERA program. The Director of Tyson facility, acting as the representative of the landowner has granted a verbal right-of-entry to the facility.

The Director and POC, Dr. Richard W. Coles, has asked/stressed that discretion be used when contacting or visiting the site. This is due to the sensitive nature of the present use of the property. The Tyson tract of land is also within a few miles of Times Beach, Missouri (a well-known dioxin hazardous waste site). These circumstances have resulted in a high degree of public and Tyson personnel awareness of possible hazardous wastes. Dr. Coles has requested that all DERP communication and conversation of hazardous wastes be strictly limited to himself at this time. Dr. Coles wishes to avoid all rumors, publicity, and community involvement until necessary.

Determination

Based on the foregoing Findings of Fact, it has been determined that prior DOD ownership and utilization of the site as described above has significantly contributed to the present objectionable condition (items b and d of paragraph 1) of the site to the extent that a restoration project beginning with further site hazard investigations is eligible within the purview of Public Law 98-473, Continuing Appropriation, 1985 (Conference Report (HR98-1159)), for the reasons stated above. Several other questions exist concerning the Tyson Powder Farm. The present owner of the property would like assurance that the structures on the premises are not contaminated from previous activities such as chemical warehousing and storage. Also, the property owner has a letter from an individual who worked on the property during DOD ownership. In this letter is a statement indicating substantial quantities of mercury-contaminated brass ammunition casings were buried at the site. It is recommended that a confirmatory study of the subject project be performed.

 Paved Road
 Unpaved Road
 Steep or often muddy place (4-wheel drive only)

~~ECOLOGICAL
CONTROL AREA~~

TO EUREKA

**PHOTO
BLIND**

WOLF

_RAPTOR

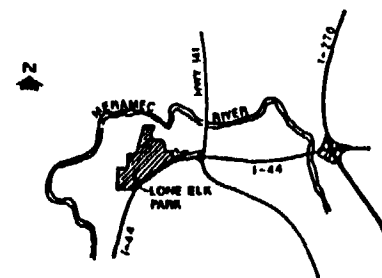
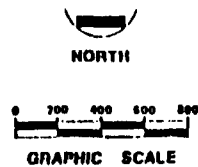
ANIMAL CARE

**LONE
ELK
PARK**

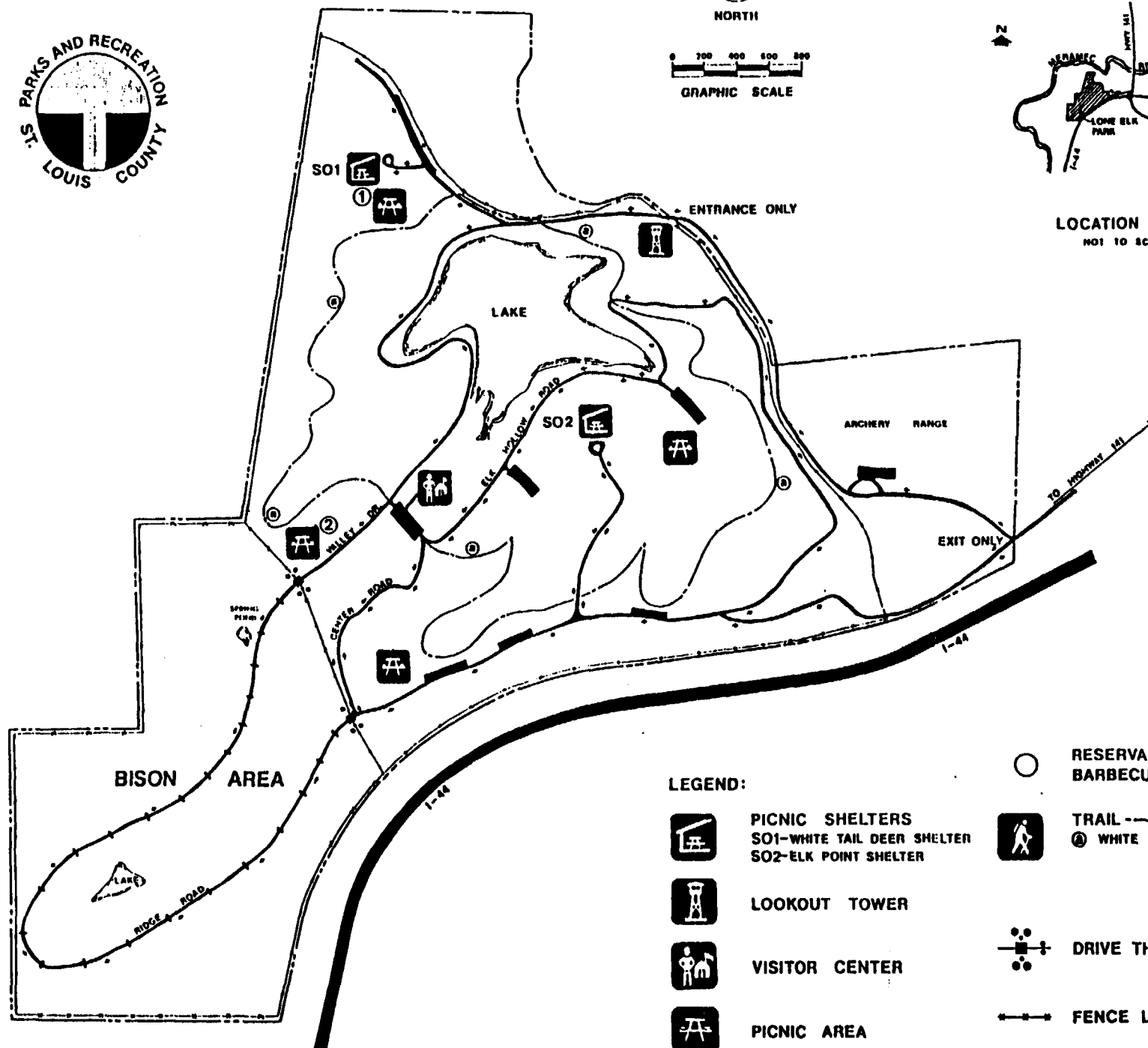
TO
VALLEY
PARK

ENTRANCE

BEAUMONT FORT RESERVATION



LOCATION MAP
NOT TO SCALE



LEGEND:



PICNIC SHELTERS
SO1-WHITE TAIL DEER SHELTER
SO2-ELK POINT SHELTER



LOOKOUT TOWER



VISITOR CENTER



PICNIC AREA



RESERVABLE
BARBECUE PIT



TRAIL - - - - -
② WHITE BISON TRAIL



DRIVE THROUGH, NO HIKING



FENCE LINE

APPENDIX C-1.2

**CEMRD-ED-HP memorandum, subject: Defense Environmental Restoration Program
for Formerly Used Defense Sites (DERP-FUDS) Inventory Project Report (INPR)
for Site No. B07MO017300, the Former Tyson Valley Powder Farm Missouri,
dated 12 November 1992**

and

**CEMRD-MD-HA Findings of Fact
dated 12 July 1991**

and

**CEMRK-ED-TD RAC Form
dated 1992**

12 NOV 1992

CEMRD-ED-HP (200-1c)

MEMORANDUM FOR Commander, U.S. Army Engineer Division,
Huntsville, ATTN: CEHND-ED-PM, P.O. Box 1600,
Huntsville, AL 35807-4301

SUBJECT: Defense Environmental Restoration Program for
Formerly Used Defense Sites (DERP-FUDS) Inventory Project
Report (INPR) for Site No. B07MO017300, the Former Tyson Valley
Powder Farm, Missouri

1. Reference memorandum, CEMRK-ED-TD, 27 October 1992,
subject: DERP-FUDS Inventory Project Report (INPR) for Site
No. B07MO017300, the Former Tyson Valley Powder Farm, Missouri
(copy enclosed).
2. I am forwarding the revised INPR with Risk Assessment Code
(RAC) score for appropriate action. The site is eligible for
DERP-FUDS. The proposed project is eligible for DERP-FUDS.
The initial INPR Findings and Determination of Eligibility
(FDE) was signed 12 July 1991.
3. Request you coordinate with HQUSACE on the potential
Ordnance and Explosive Waste (OEW) project approval.
4. If there are any questions, please contact Roger Hager,
telephone (402) 221-7469.

/s/ Gaylerd E. Davis

Encl
as

JOHN E. SCHAUFELBERGER
Colonel, EN
Commanding

CF:
CEMP-RF
CEMRK-ED-TD (wo/ encl)
CEMRD-ED-HP (wo/ encl)

EDT

CEMRD-MD-HA (200-1c)

12 JUL 1991

MEMORANDUM FOR CDR USACE (CEMP-R), WASH DC 20314-1000

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site No. B07M0017300, the Former Tyson Valley Powder Farm, Missouri

1. Reference memorandum, CEMRK-ED-TD, 1 July 1991, subject as above (copy enclosed). This includes the engineering report on the confirmation study.
2. I am forwarding the INPR for Former Tyson Valley Powder Farm for appropriate action. The site is eligible for DERP-FUDS. The proposed project is eligible for DERP-FUDS.
3. I recommend that CEMP-R approve the HTW (RI/FS) project and assign it through this Division to CEMRK for execution in FY 92 at an estimated cost of \$561,000. A limited RI/FS should be sufficient.
4. If there are any questions, please contact Roger Hager, telephone (402) 221-7469.

SIGNED
Donald E. Hazen

Encl
as

DONALD E. HAZEN
Colonel, EN
Commanding

CF:
CEHND
CEMRK-ED-TD (memo & signed FDE only)
CEMRD-MD-HA (memo only)

RECEIVED

JUL 17 1991

CEMRK
ED-TD

27 OCT 1992

CEMRK-ED-TD (200)

MEMORANDUM FOR Commander, Missouri River Division,
ATTN: CEMRD-ED-CP (Roger Hager)

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site No.
B07MO017300, the Former Tyson Valley Powder Farm, Missouri

1. This abbreviated INPR reports on the preliminary assessment for ordnance and explosive waste (OEW) at the former Tyson Valley Powder Farm. A site visit was conducted on 8 October 1992. The previously submitted Site Survey Sheet is enclosure 1 and the site maps are enclosure 2.

2. We have previously determined that the site was formerly used by the Army. The Findings and Determination of Eligibility which was approved on 12 July 1992, by the Division Commander is enclosure 3.

3. The Project Summary Sheet for OEW is enclosure 4 and the Risk Assessment Code (RAC) is enclosure 5.

4. I recommend that you:

a. Forward a copy of this INPR to CEHND for implementation of the recommended OEW project.

b. Forward a copy of this INPR to CEMP for information.

5. The District's point of contact for this matter is Dan Ahern at 816-426-2608, extension 3010.

5 Encls

WILBUR H. BOUTIN, JR.
Colonel, EN
Commanding

CF:
ED-X (wo/encls)
Dist Read File

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR
FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

The Former Tyson Valley Powder Farm, Missouri

Site No. B07MO017300

FINDINGS OF FACT

1. In May and June 1941, the Government acquired fee title to 2,620 acres, by condemnation, for the Tyson Valley Powder Farm in St. Louis County, Missouri. A transmission line easement of 1.69 acres was acquired on 3 August 1942. The facility was developed for storage of ammunition, chemicals and other wartime supplies as well as for testing of certain types of ammunition. On 12 December 1945 the installation was transferred to the War Assets Administration (WAA) for disposal. By quitclaim deed dated 25 September 1947, the Federal Farm Mortgage Corporation (FFMC) conveyed to the State of Missouri acting by and through the State Highway Commission of Missouri a strip of land for use as a highway (Interstate 44). The exact acreage of this tract is unknown. There was no recapture clause or restoration provision. By quitclaim deed dated 23 June 1950, the FFMC, acting for the General Services Administration (GSA), successor in function to the WAA, conveyed the remainder of the installation, including all improvements except a small amount of railroad trackage which was removed from the site, to the County of St. Louis, to be used for park and recreational purposes. The deed contained a recapture clause. On 5 September 1951, the Department of the Army exercised its right of recapture and reoccupied the Tyson Valley Powder Farm until 2,371.70 acres fee and 1.69 acre easement were reacquired. The balance of the original acquisition remained in St. Louis County's ownership and was utilized for parks and recreation, and was released from the recapture rights by release dated 2 June 1955.

2. The Department of the Army used the installation in conjunction with the St. Louis Ordnance Plant, which was one of the principal plants for the production of small arms ammunition. Tyson Valley Powder Farm was specifically used for the storage of propellant powder, priming, pyrotechnic and incendiary chemicals and to provide test range facilities on which proof firing of small arms ammunition was conducted. Construction of improvements first took place 26 May 1941 through 12 December 1945 and consisted of igloos, magazines and storage vaults, roads, fences, sewers, railroads, concrete pipe culverts, water, sewage and electrical supply facilities. At the time Tyson Valley was reoccupied in 1951, all improvements were in a generally run down condition. Upon occupancy of the property the Government expended \$193,725.38 in rehabilitating igloos and vaults, buildings, roads, bullet traps and replacing railroad facilities. In addition, improvements were constructed from 1951 through 1961 which included two warehouses, storage tank, railroad and other facilities relative to storage. On 19 January 1959 a right-of-way easement was granted to the State of Missouri by the United States. The Indianapolis Grain Warehouse Corporation entered into a lease with the

Encl :

United States commencing 1 October 1960 for general commercial warehousing purposes. The lease involved 5 acres of land, two single story warehouses, railroad sidings and docks.

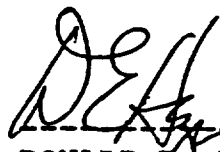
3. The installation was reported as excess to General Services Administration (GSA) on 27 October 1961. By quitclaim deed dated 2 October 1963, the United States of America acting by and through the Department of Health, Education and Welfare (HEW) conveyed 1,966.46 acres fee to Washington University of St. Louis. The deed restricted use to educational purposes for 20 years and contained a recapture clause. There was no restoration provision. By a grant of easement dated 10 December 1963 the Government conveyed the 1.69 acres easement to Washington University. The remaining 405.24 acres were conveyed to the County of St. Louis, Missouri, by quitclaim deed dated 3 February 1964. This tract of land is covered by an Inventory Project Report filed for the Tyson Valley Lone Elk County Park, site number B07MO017301. The deed restricted use of the land to park and recreational purposes for 20 years and contained a recapture clause. There was no restoration provision.

DETERMINATION

Based on the foregoing findings of fact, the site has been determined to have been formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program-Formerly Used Defense Sites established under 10 USC 2701 et seq.

12 JUL 1991

Date



DONALD E. HAZEN
Colonel, EN
Commanding

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. B07MO017304
THE FORMER TYSON VALLEY POWDER FARM, MISSOURI
SITE NO. B07MO017300
22 OCTOBER 1992

PROJECT DESCRIPTION: This site was an ordnance production, storage and testing facility. Reports indicate that there was a PETN bunker on site. Also, there are 52 ordnance storage igloos at this site. During the 8 October 1992 visit, many .30 caliber and 20mm spent casings were discovered.

PROJECT ELIGIBILITY: Records and maps indicate that this site was constructed and used by the Army during WW II and the Korean conflict.

POLICY CONSIDERATIONS: There are no policy considerations that would prohibit the proposal of this project.

PROPOSED ACTIVITIES: Recommend that the Corps' Mandatory Center of Expertise (MCX) at CEHND make a determination of any further action. It is suggested that if an historical review is conducted that the entire former powder farm be investigated. This would include that part of the site that is now known as the Lone Elk County Park (see site map), which is covered under a separate INPR, site number B07MO017900.

RAC FORM: The RAC form is enclosure 5.

DISTRICT POC: The District's point of contact for this matter is Dan Ahern, at 816-426-2608 extension 3010.

Encl 4

10 Jul 1992

Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name Tyson Valley Powder Farm
Site Location St. Louis County, Missouri
DERP Project # BC1MOC1736C

Rater's Name Dan Ahern
Organization CEMRK-ED-TD
RAC II A 1

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10.

The OEW risk assessment is based upon documented evidence consisting of records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. These data are used to assess the risk involved based upon the hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability.

Any field activities should be made with the assistance of qualified EOD personnel.

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE

A. Conventional Ordnance and Ammunition

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Small Arms (.22 cal - .50 cal)	1	0	<u>1</u>
Medium/Large Caliber (20 mm and larger)	10	0	<u>10</u>
Bombs, Explosive	10	0	—
Bombs, Practice (w/spotting charges)	6	0	—
Grenades, Hand and Rifle, Explosive	10	0	—
Grenades, Practice (w/spotting charges)	4	0	—
Landmines, Explosive	10	0	—
Landmines, Practice (w/spotting charges)	4	0	—
Rockets, Guided Missiles, Explosive	10	0	—
Detonators, Blasting Caps	6	0	—
Conventional Ordnance and Ammunition Value (Maximum of 10).			<u>10</u>

ENCLOSURE

B. Pyrotechnics(For munitions not described above.)

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Munition (Container) Containing White Phosphorus or other Pyrophoric Material (i.e., Spontaneously Flammable)	10	0	—
Munition Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6	0	—
Flares, Signals, Simulators	4	0	—

Pyrotechnics Value (Maximum of 10).

0

C. Bulk High Explosives (Bulk explosives not an integral part of conventional ordnance; uncontainerized.)

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10	0	—
Demolition Charges	10	0	—
Booster, Bursting or Fuze Explosives (<u>PETN</u> , Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8	0	<u>8</u>
Military Dynamite	6	0	—
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3	0	—

High Explosives Value(Maximum Value of 10)

8

D. Propellants

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Solid or Liquid Propellants	6	0	— <u>0</u>

E. Radiological/Chemical Agent/Weapons

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25	0	—
Radiological	15	0	—
Riot Control and Miscellaneous (Vomiting, Tear, etc.)	5	0	—

Radiological/Chemical Agent/Weapons Value (Maximum 25).

0

Total Ordnance and Explosive Waste Characteristics Value (Total =
A + B + C + D + E with a Maximum value of 61).

18

Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY

Description	Category	Value
CATASTROPHIC	I	≥21
CRITICAL	II	≥13 <21
MARGINAL	III	≥5 <13
NEGLIGIBLE	IV	≥1 <5
NONE		0

* Apply Hazard Severity Category to Table 3.

== 61 0.0-0.5

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION

A. Locations of Contamination

	<u>YES</u> VALUE	<u>NO</u> VALUE	VALUE
On the surface	5	0	<u>5</u>
Within Tanks, Pipes, Vessels or Other confined locations.	4	0	—
Inside walls, ceilings, or other parts of Buildings or Structures.	3	0	—
Subsurface	2	0	—
Value for location of UXO. (Maximum Value of 5).			<u>5</u>

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW site (roads, parks, playgrounds, and buildings).

<u>Distance to Nearest Target</u>	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
Over 2 miles	1
Distance to Persons Value (Maximum Value of 5).	<u>5</u>

C. Numbers and types of Buildings within a 2 mile radius measured from the hazardous area, not the installation boundary.

Number of Buildings	VALUE
0	0
1 to 5	1
6 to 10	2
11 to 15	3
16 to 25	4
26 and over	5
Number of Buildings Value (Maximum Value of 5).	<u>5</u>

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, etc.	5
Residential, Hospitals, Hotels, etc.	(5)
Commercial, Shopping Centers, etc.	(5)
Industrial Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
Military	1
No Buildings	0

Types of Buildings Value (Maximum Value of 5).

5

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0

or

Barrier	Assigned Value
An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Isolated site	1
Security guard, but no barrier	(2)
A barrier, (any kind of fence) but no separate means to control entry	3
Barriers do not completely surround the facility	3
No barrier or security system	5

Accessibility Value (Maximum Value of 5).

2

F. Site Dynamics - is deals with site conditions at are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

VALUE

None Anticipated
Expected

0
5

(Maximum Value of 5)

5

Total value for hazard probability.
Sum of Values A through F.
(Not to exceed 30).

27

=====

Apply this value to Hazard Probability Table 2 to determine
Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	<u>A</u>	≥27
PROBABLE	B	≥21 <27
OCCASIONAL	C	≥15 <21
REMOTE	D	≥ 8 <15
IMPROBABLE	E	<8

* Apply Hazard Probability Level to Table 3.

=====

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1** Imminent Hazard - Emergency action required to mitigate the hazard or protect personnel (i.e., Fencing, physical barrier, guards, etc.).
- RAC 2 Action required to mitigate hazard or protect personnel. Initial project phase--phased EECA.
- RAC 3 Action required to evaluate potential threat to personnel. Initial project phase--Archives search and site investigation.
- RAC 4 Action required to evaluate potential threat to personnel. Initial project phase--Archives search.
- RAC 5 No action required.

NOTE: Other phases may be considered depending on individual site conditions.

Justification. In narrative form, summarize the documented evidence that supports this risk assessment.

Justification:

There are between 28 and 30 workers on the Washington University's portion of the site during the work week.

There is an estimated 15,000 visitors to this facility annually.

The water supply to this installation is from onsite water wells.

The site is within two miles of the EPA Superfund site of Times Beach, Missouri (a well known dioxin site).

Conventional access to the site is by a single road through a locked and guarded DOD constructed fence. However, the gate is not manned between midnight and 0800.

The other portion of the former ordnance works is owned and operated as a park by the St. Louis County Parks Department. This portion is named the Lone Elk County Park and is a wildlife sanctuary containing herds of elk, white tail deer and bison. This portion of the site has virtual uncontrolled access.

There is a deteriorating 20 mm intact cartridge in the display case at the main entrance to the Washington University's property.

APPENDIX C-2.1

**Ordnance War Administration History,
The Ordnance Organization in World War II,
GOCO Plant Directory, St. Louis Ordnance Plant
dated 1942 - 1943**

GOCO PLANT DIRECTORY

(CHF thru 31 Dec. '43-)

Name of Plant: St. Louis Ordnance Plant

Location: 4300 Goodfellow Boulevard, St. Louis, Missouri

Product: Ammunition - Cal. .30 and .50 in these types; ball, armor piercing, and tracer; and bullet cores.

Operators: The ammunition producing portion of the plant was operated by the United States Cartridge Company, a wholly owned subsidiary of the Western Cartridge Company, East Alton, Illinois. The core producing facilities were operated by the McQuay-Norris Manufacturing Company, Ordnance Management Division, St. Louis, Missouri.

Contracts: On 5 Dec. 1940, Industrial Service Br. of OCO negotiated a contract with the Western Cartridge Company for management service, training of personnel, and engineering service in obtaining equipment for the St. Louis Ordnance Plant. On the same date another contract, W-CRD-491, was negotiated with the United States Cartridge Co. to operate the St. Louis Plant after it was built and equipped. Contract W-CRD-505, dated 25 Feb 1941, was made with the McQuay-Norris Manufacturing Co. to cover equipment and operation of the armor piercing core plant also located at the plant site on Goodfellow Boulevard.

Draft A

2.

GOCO PLANT DIRECTORY

(OHF thru 31 Dec. 1943)

First Operations:

First lot of cal. .30 ball accepted	16 Dec. 1941
cal. .30 A. P. "	30 Jan. 1942
cal. .30 Tracer M1 accepted	30 Jan. 1942
cal. .30 Tracer M2 accepted	28 Dec. 1942
cal. .50 Ball accepted	28 Jan. 1943
cal. .50 A. P.	20 Dec. 1941
cal. .50 Tracer	31 Jan. 1942
cal. .50 Incendiary	10 May 1943
cal. .50 A. P. I.	22 Dec. 1943

First lot of cores accepted:

caliber .30 A. P.	29 Sept. 1941
" .50 A. P.	29 Sept. 1941
" .30 Incendiary	4 July 1942
" .50 "	28 May 1942
" .50 Tracer M-2	4 Feb. 1943
" .50 Ball	11 Mar. 1943

The production of the caliber .30 incendiary core was discontinued in February 1943, and of the caliber .50 Tracer M-2 core in April 1943.

Termination: Still in operation on 31 Dec. 1943.

Site and Facilities: The area of the main plant site of 4300 Goodfellow Boulevard was approximately 300 acrs. The storage area was about 4 square miles, occupying the Tyson Valley just west of Valley Park, Missouri. The plant consisted of more than 300 separate buildings, providing approximately 4,210,000 square feet of floor space. There were eight complete ammunition

GOCO PLANT DIRECTORY

(OHF thru 31 Dec. 1943)

manufacturing divisions equipped with manufacturing space, inspection facilities, shipping department, cafeteria, and subsidiary magazines and loading buildings. These main buildings were of a two-story construction and some included complete basements. Two separate restricted areas were designated for the manufacture of primer and tracer charging operations. The ninth complete manufacturing division consisted of the three buildings for the manufacturing of armor piercing cores.

Cost: Ammunition plant; \$120,529,223; Core plant: \$12,443,621; Total cost \$132,972,844.

Special Factors: The St. Louis Ordnance Plant was the largest employer of labor in the St. Louis area with over 42,000 men and women working three 8-hour shifts, 6 days a week, at peak operations.

In Jan. 1943, the St. Louis Star-Times charged that employees of the U. S. Cartridge Co. were passing defective components and defective finished ammunition as good work. On 21 Dec. 1943, the Federal Grand Jury indicted 10 employees on charges of sabotage and of conspiracy to defraud the Government.

GOCO PLANT DIRECTORY

(CHF thru 31 Dec. 1943)

by circumventing inspection procedures and causing delivery of defective cartridges. There were acquittals and dismissals of charges as a result of the court action.

Production: Through 31 December 1942, in rounds: ¹

<u>Type Cartridge</u>	<u>Total Acceptances</u>
Caliber .30 Ball	1,398,126,328
Caliber .30 Armor Piercing	588,116,960
Caliber .30 Tracer	393,613,420
Caliber .50 Ball	350,847,575
Caliber .50 Armor Piercing	1,010,528,870
Caliber .50 Tracer	441,027,766
Caliber .50 Incendiary	37,590,164
Caliber .50 A. P. Incendiary	1,385,088
	<u>4,221,236,471</u>

<u>Type Core</u>	<u>Total Shipments</u>
Caliber .30 Armor Piercing	1,787,507,829
Caliber .50 Armor Piercing	1,811,005,806
Caliber .30 Incendiary	63,544,000
Caliber .50 Incendiary	1,085,164,000
Caliber .50 Tracer M2	1,037,867
Caliber .50 Ball	376,438,000
	<u>5,124,697,502</u>

¹ Cost and production figures from letter, 3rd ind. to OO 314.7/1905, dated 26 July 1944, from St. Louis Ord. Plant.

GOCO PLANT DIRECTORY

(OHF thru 31 Dec. 1943)

ST LOUIS ORDNANCE PLANT

Commanding Officers

Lt. Col. C. S. Paullin (--- to Feb '43)

Col. R. L. Hart (Feb '43 to Aug. '43)

Lt. Col. Geo. V. Riley (Aug '43)

Plant Managers

Mr. E. E. Bassett- U. S.
Cartridge Co.

Mr. L. T. Cummings -
McQuay-Norris Mfg Co.

APPENDIX C-2.2

**War Assets Administration Correspondence, concerning: Contaminated Areas,
at Tyson Valley Powder Farm,
dated 5 March 1947**

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WAR ASSETS ADMINISTRATION
505 North Seventh St.,
St. Louis (1), Missouri
Phone: Central 3200

Rb 270 Loc: St. Louis AIRCRAFT TO
ST. LOUIS ORDN. PLANT
FILE: ST. LOUIS ORDN. PLANT
Tyson Valley

In Reply Refer to: RSL-PPM-V.O.Karsnick

March 5, 1947

Mr. A. J. Wilson
Deputy Director
Property Management Division
War Assets Administration
Washington 25, D. C.

Attention: Mr. James A. Forney, Decontamination Section

Dear Mr. Wilson:

Reference is made to TT from your office dated February 12, 1947 and to TT from this office to your office dated February 19, 1947 concerning the status of contamination at Tyson Valley Powder Farm. ✓

Inspection of this facility by Property Management Division personnel of this Regional Office on February 18, 1947 indicated contamination of certain land areas at Tyson Valley Powder Farm. The contamination referred to consisted of live and scrap 30 and 50 caliber ammunition. This ammunition had been subjected to a mercury cracking test at St. Louis Ordnance Plant during the war and was buried in shallow trenches at Tyson Valley. Evidence gained at the facility indicates that the mercury in conjunction with the elements is decomposing the ammunition at a rapid rate, inasmuch as a very small percentage of apparently complete rounds thrown in to a fire show any evidence of detonation.

Subsequent to this inspection a decontamination squad was designated by the Division Engineer, Missouri River Division, to this facility to decontaminate as necessary. Contact this date with the Officer in Charge of the decontamination squad indicates that work of decontamination will be completed on or about March 8, 1947. The Officer in Charge of this decontamination squad has requested that a letter be given him indicating the conditions under which the Regional Office of WAA will accept custody and accountability for the area.

Your attention is invited to the attached copy of letter dated 28 January 1947, from the St. Louis District Engineer Office to the Office Chief of Engineers, which provides a current history of developments in connection with decontamination at this facility.

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2-A. J. Wilson, WAA, Wash.

Your attention is also invited to the attached copy of letter sent to the Division Engineer, Missouri River Division, stating the conditions under which WAA and Federal Land Bank will accept custody and accountability of this facility. Contact with the Officer in Charge of decontamination squad indicates that the owning agency will erect or is erecting a three-strand barbed wire fence around the contaminated area and will give a **clear** certification of decontamination for all except the fenced in area which will be decontaminated to idle standby condition and will consist of something less than ten acres of land. This area will be defined on a general area map as indicated on the attached letter to the Division Engineer.

Very truly yours,

/s/ Wm. H. HOWARD
WM. H. HOWARD
Acting Deputy Regional Director
Real Property Disposal

Enclosure

APPENDIX C-2.3

**Headquarters, Det. #6, Valley Park, Missouri, correspondence, subject:
Report of Decontamination of Tyson Valley Power Farm,
dated 6 March 1947**

HEADQUARTERS
Det. #6, 9800 TSU-CE
Bomb & Shell Disposal Team
Valley Park, Missouri

6 March 1947

TO: Office of Div. Engr. MRD, Omaha, Nebr. (Attn. F.M. Littrel)

SUBJECT: Report of decontamination of Tyson Valley Powder Farm.

- 1 Detachment 6, 9800 TSU-CE, Engr. Bomb & Shell Disposal Team, working under SO No. 3, per paragraph 1, dated 10 January 1947, MRD, Omaha, Nebraska, moved to the vicinity of Valley Park, Missouri for the purpose of decontaminating the ammunition, calibres 30 and 50, buried at Tyson Valley Powder Farm.
- 2 After inquiries made with men who had worked here, while this project was in operation, the places of burial were found. On digging around in the ground, there was uncovered several thousand spent cartridges and approximately 1000 live rounds of calibre 30 and 680 live rounds of calibre 50 ammunition mixed with the spent rounds. Both the spent cartridges and the live ammunition had been processed with metallic mercury and acid; presumably nitric acid; to accelerate the deterioration of this ammunition. The live ammunition was separated from the spent rounds and destroyed by fire. Since all of the spent cartridges were in the advance stages of deterioration, they were again buried in the same location to further decompose.
- 3 The butts at the calibre 30, 50 and 60 ranges are considered free of any harmful properties since nothing was found to indicate this area to be contaminated. A few incendiary and tracer bullets were found embedded in the butts but nature has rendered them harmless.
- 4 I hereby certify that the entire area of the Tyson Valley Powder Farm, with the exception of the one acre mentioned below, is free of all duds and explosives and considered safe for all purposes. Approximately one acre, plotted on May (Site Plan, Storage Area, Tyson Valley.) located 280 feet NE of PRTH vault #1. Area runs parallel to the fenced

(Report of Decontamination of Tyson Valley Powder Farm, Cont'd)

railroad spur track, is bounded on the N and E side by roads and on the W side by a stream. This area has been fenced with a three strand barbed.wire fence and properly marked with danger signs by this unit after consulting the W.A.A. and the Office of the Division Engineer, MRD.

5. It is recommended that this area remain fenced and properly marked until it is again inspected and properly released. The ammunition that might still be in this area was treated with metallic mercury and is in the process of oxidation.
6. It is also recommended that the area be inspected again in about a year and then released if nothing is found to indicate the area is still contaminated. During this inspection and before the release of this area, a chemical analysis should be made of several samples of the soil within the fenced area, to be sure the metallic mercury does not appear in large enough quantity to effect stock grazing on this area.

ASA B LUTER
Capt CE
Commanding

BLOCK NO. 6 - SCHEDULE "D"

COPY OF REPORT OF DECONTAMINATION OF
TYSON VALLEY POWDER FARM, DATED 6 MARCH
1947, PREPARED BY THE COMMANDING OFFICER
HEADQUARTERS, DET. #6, 9800 TSU-CE, NOMB
AND SHELL DISPOSAL TEAM, VALLEY PARK,
MISSOURI, IN WHICH IS DESCRIBED THE CON-
DITION OF THE AREA BEING WITHDRAWN.

APPENDIX C-2.4

War Assets Administration Correspondence, subject: Preliminary Report,
Tyson Valley Powder Farm
dated 24 March 1947

WAR ASSETS ADMINISTRATION
Office of Real Property Disposal
Room 1132 Arcade Building
812 Olive Street
St. Louis 1, Missouri
Telephone: Central 3200

In reply refer to:
RSL-PPM-F.T.Cutts*

March 24, 1947

Mr. Thomas E. Drumm, Jr.
Deputy Administrator
Office of Real Property Disposal
War Assets Administration
Washington 25, D. C.

ATTENTION: C. D. Williams, Director
Property Management Division

SUBJECT: Tyson Valley Powder Farm

Dear Mr. Drumm:

This report is submitted in connection with the proposed transfer of the subject facility from the custody of the District Engineer, Corps of Engineers, St. Louis, Missouri, to the custody of the Farm Credit Administration and in compliance with Section 300.04, Manual W4-3, "Real Property Management".

R E P O R T

I. General Information:

- A. WAA Case Number: W-No-4B
- B. Name of Facility: Tyson Valley Powder Farm
- C. Location of Facility: Near Eureka, St. Louis County, Mo.
- D. Owning Agency: Facility is now in the custody of District Engineer, Corps of Engineers, St. Louis Office.

Representative: Mr. E.J. Harrington, Asst. Executive Officer, District Engineer, U.S. Court & Custom House, 1114 Market Street, St. Louis 1, Mo.

Personnel at Joint Inspection of the Facility on March 20, 1947: G.W. Smith, U.S. Engineer Office, St. Louis
C.H. Finley, Federal Land Bank, St. Louis
J.R. Lewis, WAA Warehousing Div, St. Louis
L.M. Larsen, WAA Personal Property, St. Louis

2-Preliminary Report, Tyson Valley Powder Farm-Mar 24, 1947

Clete Barnett, U.S. Engineer (Custodian)
Francis T. Cutts, WAA, St. Louis

- E. Owning Agency Number; WD-701
- F. Sponsor: Army Ordnance Department
- G. Lessee: This facility was a storage and testing area for the St. Louis Ordnance Plant.
- H. Products Manufactured: None. Ammunition storage only.
- I. General Statement and Description of Property: This facility was initiated by the Ordnance Department to provide storage for explosives. The total cost was \$3,199,650.00 of which \$152,698.00 represents cost of the land. It occupies a tract of land of irregular shape lying north and west of U.S. Highway No. 66 and adjacent to the right-of-way of the St. Louis and San Francisco R.R. Co. The tract contains approximately 2620 acres, most of which is enclosed by an 8' galvanized chain-link-mesh fence with barbed wire overhang at the top. The land is rough with rugged hills heavily wooded with poor quality timber and with many valleys in which the storage igloos and many of the miscellaneous other buildings are located. There is an easement for an electric transmission line containing 1.69 acres. The main entrance to the Reservation is from U.S. Highway No. 66 and a system consisting of 21 miles of all-weather roads make most of the buildings accessible. Drainage is provided by box and pipe culverts. There are approximately 149 buildings. Of these, the 52 storage igloos, 10 P.E.T.N. vaults, a firing tower, and 4 transfer docks are constructed of reinforced concrete; 3 chemical warehouses are constructed with concrete foundations, brick walls and concrete roofs; the Administration Building and one stable have concrete foundations with timber framing for walls and roof with asbestos shingle siding and roof; an oil storage building is constructed of a wood frame covered with galvanized corrugated iron siding. These buildings are well constructed and in good condition. The remaining buildings are frame (in most cases) of more temporary type of construction, built either on skids or on footing plank. There are in addition 6 buildings known as club houses that were on the property when it was acquired. These are for the most part frame buildings and are not in good condition. The Administration Building and Guard Quarters at the main entrance are heated by stoker-fired plants. These buildings are equipped with toilets and locker rooms. The old Administration Building and the Hospital Building are heated by coal-fired hot air furnaces. Stoves are used to heat buildings that require to be heated.
- other

3-Preliminary Report, Tyson Valley Powder Farm-Mar 24, 1947

J. Type of Facility: Storage of Explosives.

II. Major Alterations or Removals of Structures:

There have been no major alterations or removals of structures at this facility except 4 small buildings have been removed since the property was declared surplus.

III. Buildings or Structures Owned:

<u>NO.</u>	<u>DESIGNATION</u>	<u>BUILDING NUMBER</u>	<u>TOTAL AREA</u>
3	Chemical Warehouses	301-1, 301-2, 301-3	15213
1	Pump Hose #2	302-2 PH	161
52	Igloos	305-1 to 305-52 Incl.	124592
4	Transfer Docks	304-1 to 304-4 Incl.	3940
10	TENT Vaults	306-1 to 306-10 Incl.	1200
5	TNT Magazines	307-1 to 307-5 Incl.	605
1	Firing Tower(	308-1	194
	4300' Range (
1	Observation Station	308-1A	81
1	" "	308-1B	60
1	" "	308-1C	81
1	Firing Station(	308-2	194
	2250' Range (
1	Observation Station	308-2A	81
1	" "	308-2B	84
1	" "	308-2C	84
1	Firing Station(	308-3	194
	600' Range (
1	Target & Underground(	308-3A	443
	Observation Station (
1	Firing Station(	308-4	186
	1500' Range (
1	Target & Observation Sta.	308-4A	1174
1	Pump House #1	309-1 FH	161
1	Horse Stable	310	3240
1	Horse Hospital	310-A	493
1	Administration Bldg.	311	2317
1	Hospital	312	1225
1	Garage, Guard &(	313	7444
	Fire Station (
4	Gate Houses	314-1 to 314-4 Incl.	1513
4	Horse Shelters	314-1A; 1B; 2A and 3A	434
1	Diesel Oil Tank(	315	110
	and Pump House (
1	Booster Pump House	316-1	176
1	Maintenance House	317	3522
1	Boot & Raincoat House	317-A	162
1	Electric Shop	318	912

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1	Mule Stable	319	1210
1	Carpenter Shop	320	1164
1	Blacksmith Shop	321	1000
1	Machine Shop	322	1077
2	Pump Houses	323-324	322
1	Maintenance Shed	326	163
1	Mercury Bin	327	620
1	Salt Shed	328	724
1	Burning ground shelter	329	162
1	Salt Shed	330-A	324
1	Cement Shed	333-B	344
1	Parts Shed	334	52
1	Oil Shed	335	219
1	Pistol Butt House	336	717
5	Fence Guard Houses	337-2 to 337-5	1067
1	Kohler Plant House	337-F 3A	34
12	Valley Guard Houses	338-V-1 to 338-V-12	895
2	Workmen Shelters	339-1 & 339-2	204
1	House	340	46
1	Time House	341	97
6	Club Houses	342-1 to 342-6 Incl.	6591

There are also 4 concrete box culvert structures, 127 pipe culverts, and 49,800' of 8' galvanized steel chain-link fence with steel posts and 4 gates.

IV. Utilities:

- A. Electric Power is furnished by the Union Electric Company of Missouri over transmission line constructed on a right-of-way provided by easement. The incoming voltage is 4150 volts. This is stepped down as required to provide service to motors, lights, etc.
- B. Gas - None
- C. Water is furnished from 4 wells at various locations. Water is pumped to steel storage tanks located at a high elevation and from these by a booster pump to a 20,000 gallon storage tank from which it is distributed to the distribution pipe lines.
- D. Communication: Telephone service formerly furnished throughout the Reservation is now limited to one telephone located in Guard or Custodian Quarters at the main entrance.
- E. Sewage Disposal is by means of 2 septic tanks located near each group of buildings having toilet facilities. Latrines are located throughout the area.

V. Fire and Safety Installations:

The chief fire hazard is from brush fires. There are 4 small hydrants located in the Administration Area which are available for use at all times. About 1800' of 1½" fire hose is on hand with necessary fittings to connect to the hydrants. Fire extinguishers are located in the principle buildings and portable water tanks with pumps and other equipment especially designed for fighting brush fires are located on the premises. There is a fire siren located on the roof of the Administration Building more than a ½ mile distant from the Headquarters of the Custodian. The Fire Departments of the Towns of Valley Park and Eureka both located within a radius of about 4 miles from the main entrance on U.S. Highway No. 66 will respond to an alarm of fire if called upon. This service is provided by arrangement and involves a charge of a small fee.

Adequate road signs are located along the main road and a small area which is not completely decontaminated has been enclosed by barbed wire fence.

VI. Transportation Facilities:

Rail transportation is provided by the St. Louis and San Francisco R.R. Co. There are about 3 miles of track within the Reservation, all well constructed of heavy rail. Truck transportation is available over U.S. Highway No. 66 which is a main artery connecting with other highways radiating from the St. Louis Area. Transportation by Barge is available by lines operating on the Mississippi River and Ohio River. Docks with adequate loading facilities are located at the Foot of North Market Street in St. Louis, Missouri, about 35 miles from the facility. A major commercial airport is located at Robertson, Missouri, a distance of 25 miles, and other privately owned airfields, not so well equipped, are located within a radius of 10 miles.

VII. Equipment Required for Protection, Care, Maintenance & Custody:

The Custodian charged with protection and maintenance will require the continued use of the water supply system, including wells, pumps, mains, storage tanks, fire hydrants, etc., motors and electric energy for power and lights; also equipment for road maintenance, and transportation suitable for use in patrolling the area; fire extinguishers and other portable firefighting equipment; suitable headquarters with necessary furniture and office equipment; and miscellaneous small tools.

VIII. Adequacy of Stock Records:

Property records, both real and personal, are located in the U.S.

Engineer Office at St. Louis. FORM SPB-5 has been filed by the Corps of Engineers and a copy is in the files of WAA at St. Louis. As of this date, Forms SPB-1 listing personal property have not been received by WAA but will no doubt be furnished at an early date.

There is no termination inventory, nor production equipment on hand.

IX. Uncompleted Work by Contractor or Owning Agency:

The contractor and the owning agency have completed their work and the facility is now under the custodianship of the District Engineer, Corps of Engineers, St. Louis.

X. Items to be Performed by WAA Prior to and Subsequent to Transfer:

Before WAA assumes temporary custody, it will be necessary that all personal property be inspected to determine best use or disposition, to check adequacy of records and also complete arrangements to immediately relinquish custody to the Farm Credit Administration.

XI. Tentative Date and Terms of Take-Over:

WAA can assume temporary custody of this facility immediately upon completion of the inspection referred to in paragraph X and upon receipt of the following documents:

- (1) Supplementary SPB-5 correcting the original to reflect the sale or other disposition of 4 buildings, or more.
- (2) SPB-1 listing all personal property.
- (3) Certificate of Decontamination satisfactory to WAA.

All of this should be accomplished within a short time.

XII. Type of Maintenance Operation:

Since only temporary custody is anticipated, maintenance will not be required of WAA. The facility is now maintained by the present Custodian under Civil Service. The present personnel consists of only one man, the Custodian, who lives in the Guard House at the main entrance and who is on 24 hour duty. He patrols the area, attends the pumps and other water supply facilities, and takes care of minor repairs. The expense for this limited protection and maintenance including personal service, light and power, telephone, and miscellaneous items, is approximately \$400.00 per month.

XIII. Decontamination:

This is extremely important. A Certificate indicating to what extent complete decontamination has been accomplished and also to what extent partial decontamination has been accomplished with description and location of the area or buildings which remain contaminated must be furnished to WAA. This certificate should include also all underground or other storage tanks, as well as the 5 igloos in which certain materials, the property of the U.S. Atomic Energy Commission, have been recently stored.

XIV. List All Outstanding Permits, Leases, Etc.:

The U.S. Atomic Energy Commission has certain materials stored in 5 of the concrete igloos. This is no doubt with the permission of the U.S. Engineer Office. However, it would seem that this permit should be revoked and the materials removed or that continued occupancy be approved by WAA as a condition to be met before acceptance of custody.

XV. Disposal Conditions:

The files in the Office of Real Property Disposal contain correspondence indicating that responsibility for disposal of this facility has been placed with the Farm Credit Administration, and it is assumed that WAA will relinquish temporary custody immediately upon acceptance to that Administration.

XVI. Summary or Recommendations:

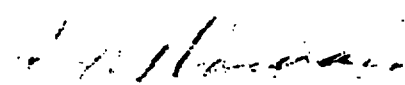
Before assuming custody, it is recommended that:

- A. Par. VIII: Supplementary Declaration of Real Property SPB-5 and a Declaration of Personal Property SPB-1 be filed with WAA.
- B. Par. XIII: A Certificate of Decontamination covering the entire facility with all buildings including those 5 igloos now occupied by the U.S. Atomic Energy Commission as well as the various storage tanks and setting forth a description and location along with full information with regard to the area where decontamination has not been completed.
- C. Par. XIV: That the Permit issued to the U.S. Atomic Energy Commission, to occupy certain igloos, be cancelled or rewritten to provide conditions of occupancy satisfactory to WAA.

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- D. Par. XV: That transfer of custody from WAA to FCA be simultaneous with the acceptance of custody by WAA from the District Engineer, Corps of Engineers.

Very truly yours,



W. H. HOWARD

Acting Deputy Regional Director
Office of Real Property Disposal

Enclosure:

Map

APPENDIX C-2.5

**Report on Application of Tyson Valley Powder Farm
For Transfer of Surplus Federal Property for
Parks and Recreation Purposes,
dated 16 September 1963**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION

Portion of

• Tyson Valley Powder Farm
St. Louis County, Missouri
(GSA Control Number D-Mo-467A)

REPORT ON APPLICATION

by

County of St. Louis, Missouri

For Transfer of Surplus Federal Property for

PARK AND RECREATION PURPOSES

Prepared by

Region 4, Bureau of Outdoor Recreation

Region 5, General Services Administration

September 16, 1963

Investigation and Report by

Robert L. Black

Recreation Planner

OCT 9 - 1963

GSA Control No. D-Mo-467A
GSA Region 5
BOR Region 4

I. Authority and Purpose

Subsection 13(h) of the Surplus Property Act of 1944 (58 Stat. 770), as amended by the Act of June 10, 1948 (62 Stat. 350), and continued in effect and amended by subsection 602(a) of the Federal Property and Administrative Services Act of June 30, 1949, as amended (63 Stat. 377), authorizes the disposal by the General Services Administration to states, political subdivisions, instrumentalities thereof, and municipalities, of surplus real properties, together with surplus improvements and equipment located thereon, which have been determined by the Secretary of the Interior to be suitable and desirable for public park and public recreation areas or as historic monuments, for the benefit of the public and which, in the case of historical properties, have been recommended for historical monument use by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments.

This report is submitted in accordance with the authority to make the necessary determination delegated to the Director, Bureau of Outdoor Recreation, by the Secretary of the Interior on July 9, 1962 (27 FR 6719).

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The General Services Administration, Region 5, Kansas City, Missouri, by letter of August 3, 1963, to the Bureau of Outdoor Recreation, Ann Arbor, Michigan, furnished an executed copy of the application signed by James H. J. McNary, Supervisor, St. Louis County, Missouri, under the authorization of Resolution No. 842 adopted May 16, 1962, by the County Council of St. Louis County, Missouri, for acquisition of a portion of Tyson Valley Powder Farm, St. Louis County, Missouri, for park and recreation purposes. The General Services Administration requested a determination by the Bureau of Outdoor Recreation as to the suitability and desirability of the property for the case applied for.

II. Investigation

The area was visited on August 28, 1963, by Robert L. Black accompanied by Wayne C. Kennedy, Commissioner of County Parks and Recreation, St. Louis County, Missouri, Abe Phillips, County Recreation Planner, and Don Davidson, Administrative Assistant. Meetings were also held in Mr. Kennedy's office with Raymond E. Flint, Director of Construction, Maintenance and Safety, Washington University, and Robert L. Elgin, Civil Engineer, who was engaged to provide the legal description and location maps for the area.

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III. Maps and Plans

The attached maps, photograph, and layout support the application. The vicinity map shows the proximity of the proposed site to existing park sites and the general location in the county. The other plan shows the proposed layout of lake and roads, and general contour of the area.

IV. Summary of Findings

1. Suitability of land and facilities for proposed use

a. Physical characteristics of the property

The property described in the application consists of approximately 405 acres of land near the southwest corner of St. Louis County. It is unimproved, hilly land with deep rocky ravines, sloping quite precipitously in spots to a broad valley floor, which drops at the lower end some fifty feet to the Meramec River. Tests made by the County Engineers indicate that an impoundment of some thirty surface acres of water is possible by building a fifty foot high dam anchored to the sides of the valley which narrows to some 500 feet at the lower end. The lake site is at present covered with brush and a young stand of softwoods. The slopes, upper ravines, and hill

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tops are heavily timbered with both hard and softwoods, typical of the Ozark country. The proposed road around the lake site would offer many scenic views of the surrounding countryside. The natural environment lends itself well to many phases of outdoor recreation and would offer recreational opportunities the year round.

b. Location and accessibility

This tract is readily accessible from all parts of the county by good paved roads and limited access highways. The service road leading to the property off of Highway 141 is blacktopped for the first one quarter mile and then winds the remainder of the two miles over narrow gravel roads to the site. Entry to the site could be located at any one of three locations without great difficulty or expense.

The tract is on the perimeter of a very heavily populated area consisting of 97 incorporated municipalities with a combined population estimated to be near 762,000.

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c. Adaptability of existing plan

The site could be adapted readily to the purposes intended. Former road beds, now overgrown with small shrubs and grass could be converted with light road-grading equipment into suitable roadways. Open spaces along the road can be developed as picnic space, observation points, or parking areas leading to campsites, hiking or nature trails. If a reservoir is developed, some existing roads would have to be relocated. This road could prove costly due to the necessary bridging of several steep ravines higher up along the western slope.

d. Utilization of lands required for recreation

The utilization plans are designed to make the best use possible of the natural environment. Hiking, camping, picnicing, nature study, field and target archery and winter sports activities, such as tobogganing, sledding, and skiing could be activated almost immediately. When the lake is completed, a further range of water oriented recreation, such as fishing, boating, and ice skating is planned. The rough and heavily

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timbered terrain rules out sport facilities such as tennis courts, baseball diamonds or playfields.

The area will be heavily used and will probably reach maximum attendance within a very few years after improvements are made.

e. Objectionable features

Up the valley above the proposed lake site are two huge concrete bunkers formerly used in target practice for field artillery. They are quite conspicuous. It is doubtful that they will ever be used for any recreation purposes, and the cost of removal would be exorbitant.

Some problems may result in the efforts of Washington University to keep the general public off their land lying adjacent to the county lands.

2. Need for additional park and recreation areas

Within the 97 incorporated municipalities in St. Louis County, there are approximately 800 to 850 acres devoted

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to park and recreational use. Generally, these facilities have been developed by and for the residents of the individual municipalities.

St. Louis County has 1,642 additional acres of park and recreation land administered by the St. Louis County Department of Parks and Recreation. This acreage is made up of nine major parks and sixteen small parks. In addition to the above, there are two large areas under the administration of the Missouri Conservation Commission, known as Rockwoods Reservation and Rockwoods Range. These areas are devoted primarily to conservation and education, with a few sites set aside for picnicing and hiking. The ever-increasing population in the St. Louis Metropolitan area and the westward expansion of subdivision development has highlighted the need for more open space land for public recreation. Any available land which can be justified for park and recreational use should be utilized for such purposes.

On the basis of two acres for each 100 population, St. Louis County along with its present 762,000 estimated population will require 15,240 acres of park and recreational space.

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Therefore, present park and recreational facilities to meet the need of St. Louis County are woefully inadequate.

Both organized and family camping has intensified the need for land. Tyson Valley Park, some 200 acres in size located three miles west of the proposed site, was purchased by the county from the Federal government in 1955 for an organized camping site. Maximum capacity of this camp has already been reached.

Commercial developments, expressways and the encroachment of communities are making even remote land areas prohibitive for purchase as camp property. The lack of available land and the high cost of adding to camp property is seriously handicapping the progress of the camping movement. To meet future population demands for outdoor recreation, steps for the acquisition of suitable natural areas such as this tract are very much in order.

3. Responsibility of applicant agency

The County of St. Louis has a home rule charter adopted by the voters at a special election March 28, 1950, amended

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November 2, 1954. It permits the County of St. Louis to acquire, establish, and provide for the planning, development, construction, maintenance and operation of a system of parks, parkways, recreation, conservation, forest, scenic, and historic sites and facilities. It allows them to join or cooperate in planning or development of programs or facilities by contract or otherwise with any city, county, state, or political subdivision including the Federal government.

In 1961 a total of \$672,496 was expended by the St. Louis County Department of Parks and Recreation out of appropriated funds. The levy at present is five mills on the tax dollar, but the county is authorized by State enabling legislation to levy up to eight mills if needed for park purposes.

St. Louis County maintains a staff of 48 permanent park employees. During the summer months when maintenance duties increase, the staff is supplemented with part-time employees.

In 1962 the Department of Parks and Recreation provided an eight week organized recreation program at 21 sites throughout the county. There were 401 temporary recreational employees for this program.

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The county has a completely equipped shop as well as heavy machinery which is available to the department for construction and maintenance of park and recreational facilities. The present staff is well trained and can adequately handle the program of utilization established. Additional employees may be acquired if needed.

Constructive progress is evident on three parcels of land purchased in the past from Federal surplus properties. This indicates the ability of the county to develop and improve such properties for the public benefit.

V. Recommendations

- (1) The some 405 acre tract of Tyson Valley Powder Farm covered in the application will serve a definite recreation need for the County of St. Louis, Missouri.
- (2) The County of St. Louis has legal authority to properly acquire and operate the area as a public park and recreation site.
- (3) The County of St. Louis has the taxing power and can obligate its resources to acquire the property and improve it.

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(4) The County of St. Louis has the staff and ability to manage and properly operate the area as proposed in their program of utilization.

On the basis of the findings of the Bureau of Outdoor Recreation, arrived at through a discussion with officials of St. Louis County, Missouri, and a visit to the site, it is recommended that the application from St. Louis County to acquire a portion of Tyson Valley Powder Farm (D-Mo-467A) be given favorable action.

Robert L. Black
Robert L. Black
Recreation Planner

Concurred in:

Evan A. Hargnes Date: *Sept. 16, 1963*
Acting Regional Director

Cleared for Distribution:

Evan A. Hargnes Date: *Sept. 16, 1963*

APPENDIX C-2.6

**MRKRE-PC Correspondence, concerning: Disposition of
Tyson Valley Powder Farm Property,
dated 26 March 1969**



DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106

IN REPLY REFER TO:

MRKRE-PC (Tyson Valley Powder Farm)

26 March 1969

Mr. Sam J. Parker
Regional Director
Property Management and Disposal Service
General Services Administration
1500 East Bannister Road
Kansas City, Missouri 64131

Dear Mr. Parker:

Inclosed, for appropriate reply to the sender, is a card (inclosure 1) from Mrs. Phillip Reither, 114 Pillar Lane, St. Louis, Missouri 63141, requesting information relative to lands formerly comprising the Tyson Valley Powder Farm (formerly known as the St. Louis Ordnance Plant - Magazine and Range), St. Louis County, Missouri.

All Government properties at the former Tyson Valley Powder Farm, Missouri, were reported excess to the General Services Administration on Report of Excess Real Property, Std Form 118, KC-174, dated 27 October 1961 (revised by supplements A, B, C, and D).

Our records further indicate that the above-referenced properties were assigned to the Department of Health, Education & Welfare who conveyed 1,966.46 acres to The Washington University, St. Louis, Missouri, by Quitclaim Deed dated 2 October 1963 (inclosure 2) and the remaining 405.24 acres to the County of St. Louis, Missouri, by Quitclaim Deed dated 3 February 1964 (inclosure 3).

A copy of our interim reply to Mrs. Reither is inclosed (inclosure 4).

Sincerely yours,

J. B. LOWE
Chief, Planning & Control Branch
Real Estate Division

4 Incl
As stated

NOW WHEREFORE, the GRANTOR, for and in consideration of the observance and performance by the GRANTEE

APPENDIX C-2.7

**Letter from Ora G. Hafley to Washington University Research Center,
concerning burial of shell casings,
dated May 11, 1981.**

When I arrived in Sept. 1951, Nathan Tyson was
No. 1 activator for the Korean Cause,
that part of Tyson taken the time
Hansen + other buildings the books
when I arrived, was by the Boone County

on May 20th 1890.
During this War II all of the
Mercury contamination .50 Caliber +
.30 Caliber shot taken within the
border at the Small Arms Plant
on 4300 Road leave the fence to
Tydon and Dennis in the ground
at Tydon. The fence line very
contaminated and when we to in
hole in May, therefore, then came

Washington & Potomac Co.
Tyron Valley, Mo.
Kearns - (a former employee,
who works at the Tyson Area
during the Korean crisis, I am visiting
evening a matter which you may

Reed, Mrs.
May 11, 1981
Washington & Penn
Sta

It is realized that this has
been many years ago, but it just
occurs to me that this condition
does exist. During the 10 years
since then there were ~~some~~ ^{some} ~~some~~
and the same danger for the
future, but all of the same
which were noted at the St. Louis
Plans are still under way at
Tipton.

1. If anyone feels that this is a scheme and I loose the story. Then help, you may contact me. If our news political and live in a small area over town.

Sincerely,

(Mr.) Dr. J. H. Gregory
P.O. Box 1137
Rochester, Mo. 63091

126 (314) 764-2573

APPENDIX C-3.1

SITE INSPECTION SAFETY PLAN

SITE INSPECTION SAFETY PLAN

Tyson Valley Powder Farm B07M00173

GENERAL

This section deals with general site safety. The overlay maps for each site will include site specific safety hazards when identified and will identify specific areas on which to concentrate during the inspection. Remember, **ALL ACTIONS MUST COMPLY WITH THE COMMON SENSE RULE!**

A. The Safety Officer has final authority on all matters relating to safety during the site visit. The safety rules will be followed at all times. Any member of the team stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. Examples might be observing hazardous munitions or dangerous wild life at the site.

1. Rule 1 - Do not touch or pick up anything at the site.

2. Rule 2 - Do not step anywhere where you cannot see where you are placing your foot.

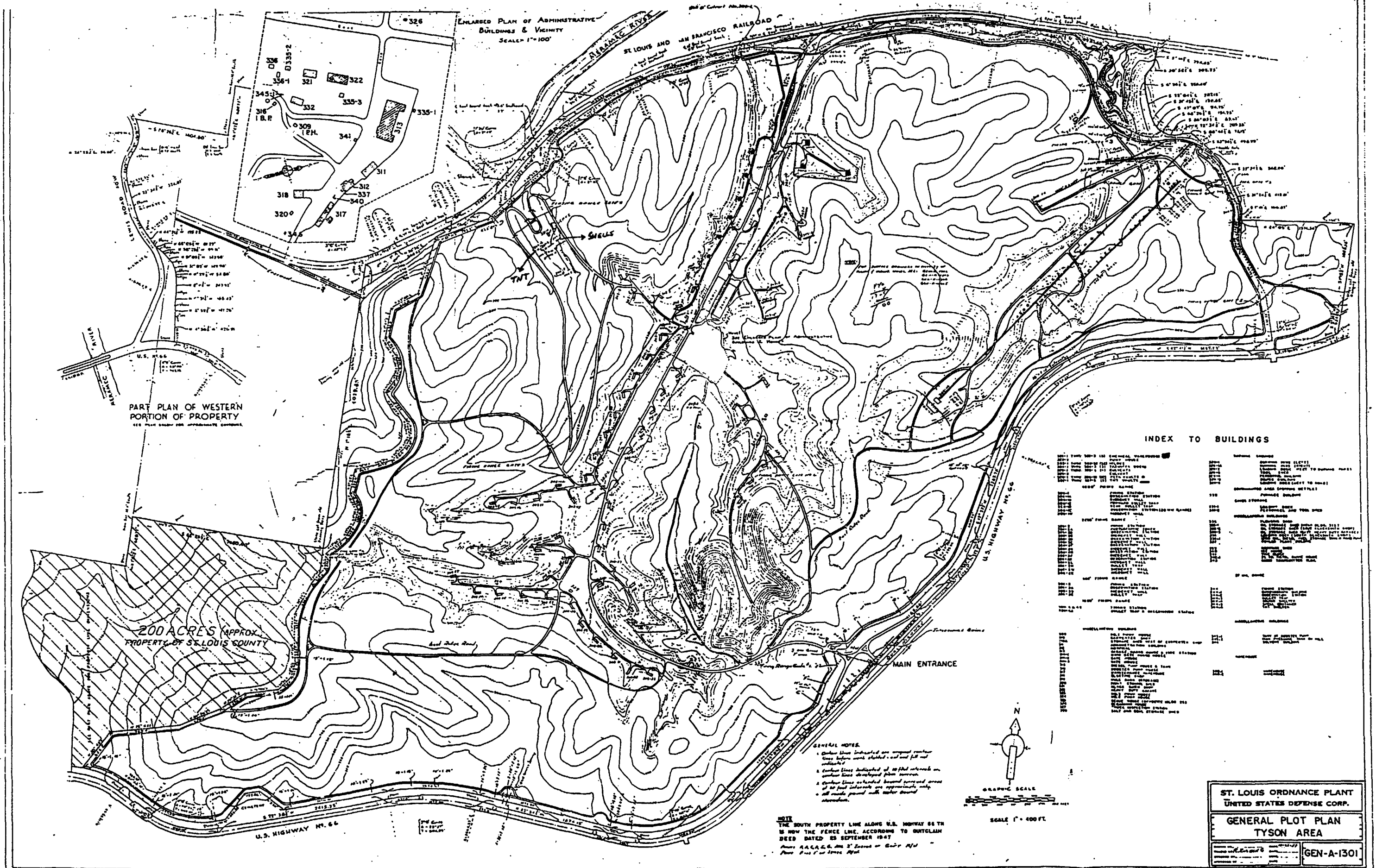
3. Rule 3 - There will be no eating, drinking, or smoking while conducting a site survey. Personnel should wash their hands after the survey and prior to eating or drinking. This does not preclude emergency actions such as the treatment for heat injuries.

B. The team, as a group, will determine the safety equipment to be used at the site. The decisions will be based upon the type of terrain, the weather, the anticipated wildlife hazards. As a minimum the team wear sturdy work clothing, safety glasses, hard hat (depending upon the situation), boots, will have a first-aid kit available, and will have cameras/binoculars for observing the site.

C. While walking the site the team will walk in a line abreast with the safety officer in the center. The distance between team members will be based upon the terrain; visibility of the ground and terrain features will be the determining factors. Only team members will be present when walking the site unless local persons are required to accomplish the mission. (Such persons might be a plant safety manager or the property owner.)

Tyson Valley Powder Farm

Tyson Valley served as a explosives and ammunition storage area for products made and used at the St. Louis Ordnance Plant. The site, which is also known as the St. Louis Ordnance Plant Magazine and Range contains four firing ranges of 4800', 2250', 1500' and 600' with accompanying ricochet walls and bullet traps. Records indicate that nothing larger than .50 cal. bullets were fired on the ranges. Locations on the site of concern to this projects are



SITE SURVEY SAFETY BRIEFING

Site: Tyson Valley Powder Farm

Safety Officer: George Sloan

Personnel Protective Equipment (PPE)

☐ Work Clothing
☐ Gloves
☐ Hardhat
☐ Hearing Protection
☐ Safety Shoes
☐ Safety Glasses

Weather Precautions

☒ Cold/Heat
☐ Severe Weather

Site Hazards

☒ OEW
☐ CSM
☐ HTW
☐ Slips, Falls, Trips
☐ Wildlife
☐ Vegetation

Attendees

Print Name and Organization

Rochelle Ross CELMS-PM-M

George F. Sloan CELMS-PM-M

Charles Camillo CELMS-PD-A

Signature

Rochelle Ross
George F. Sloan
Charles Camillo

APPENDIX C-3.2

SITE VISIT TRIP REPORT

3 December 1993



MEMORANDUM FOR: Mike Dace

SUBJECT: Site Visit on 1 December 1993 to Tyson Valley Powder Farm, Site Number B07MO0173 and the associated site Lone Elk County Park, Site Number B07MO0179, St. Louis, MO

1. SLD personnel on trip:

Rochelle Ross	PM-M
George Sloan	PD-A
Chuck Camillo	PD-A

2. The inspection team consisting of the personnel listed above met with Mr. Richard Coles, Director of the Tyson Research Center owned by Washington University, formerly known as the Tyson Valley Powder Farm, to discuss the former and current uses of Tyson Valley. The team discussed with Mr. Coles the areas where there was a possibility of OEW/CWM contamination. One of these areas Mr. Coles is concerned with and would like to see cleaned.

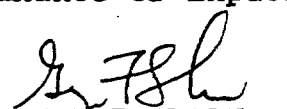
The SLD personnel and Mr. Coles first went to an area, near Igloo #52, which was mentioned in a letter from a gentleman where casings had been buried. The team saw no signs of Ordnance or Explosive Waste in this area. Kansas City District has been to the area and set up monitoring wells between the creek bed and this burial area to detect any hazardous material in the soil.

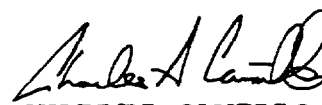
The second area the inspection team went is where burning tables were used during WWII. There are two tables still in tact and monitoring wells have been placed around that area also. Most of the bricks which covered the ground around the tables have been removed. There were no signs of OEW/CWM contamination in this area.

The third area is one of the areas which Mr. Coles would like to see cleaned. This area is in the north east corner of the Tyson Research Center Property, just west of the boundary for Lone Elk Park. Located on the site is a Popping Kettle building which is now used as a photo blind for bird watchers. In the creekbed approximately fifty (50) meters from the Popping Kettle Building are several rusted barrels and piles of .30 cal and .50 cal casings and slugs. The word "Cyanide" is printed on the side of one of the barrels. The team was unable to determine the exact number of barrels in this area

no reports or sign of Ordnance or Explosive Waste.


ROCHELLE ROSS
Project Manager


GEORGE SLOAN
Safety Officer


CHARLES CAMILLO
Archivist

APPENDIX C-4

**ADDITIONAL REPORTS, STUDIES, LETTERS, AND MEMORANDUMS
NOT OFFICIALLY INCLUDED IN THE BODY OF THE REPORT**

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179 .

**APPENDIX C-4
TABLE OF CONTENTS**

**ADDITIONAL REPORTS, STUDIES, LETTERS, AND MEMORANDUMS
NOT OFFICIALLY INCLUDED IN THE BODY OF THE REPORT**

1947. Letter from R. E. Smyser, Jr., Colonel, District Engineer, War Department, Corps of Engineers, St. Louis District, to Chief of Engineers, War Department, Washington, DC, subject: Transfer of Tyson Valley Powder Farm to Disposal Agency, dated 28 January 1947.

1947. Letter from Wm. H. Howard, Acting Deputy Regional Director, Real Property Disposal, RSL-PPM, to Division Engineer, Missouri River Division, subject: Decontamination - Tyson Valley Powder Farm, W-Mo-4-B-WD-701, dated March 4, 1947.

1947. Letter from Otto G. Klein, Regional Director, RSL-PPM, to Mr. James A. Forney, Decontamination Section, Property Management Division, Office of Real Property Disposal, Washington, DC, correspondence, subject: Tyson Valley Powder Farm, W-Mo-4B, Eureka, Missouri, dated April 15, 1947.

1949. Report from National Park Service, Department of the Interior, to US Department of Agriculture, Washington, DC, subject: Former Tyson Valley Powder Farm, St. Louis County, Missouri (WA-MO-4B) (FCA- 6-30), dated June 1949.

1949. Letter from J. A. Forney, Office of Real Property, Washington, DC, to Harry O'Neil, Assistant Management and Disposal Division - Real Estate, concerning contaminated land areas, dated October 28, 1949.

1949. Form, Declaration of Surplus Real Property, Tyson Valley Powder Farm, Missouri, dated 21 December 1949.

1951. Newspaper clipping from St. Louis Post-Dispatch, concerning cartridge case contamination in Tyson Valley, titled: Recovery of Cartridge Casings Is Curbed at Tyson Valley Park, dated August 29, 1951.

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**APPENDIX C-4
TABLE OF CONTENTS (CONTINUED)**

**ADDITIONAL REPORTS, STUDIES, LETTERS, AND MEMORANDUMS
NOT OFFICIALLY INCLUDED IN THE BODY OF THE REPORT**

1955. Report from Ordnance Corps, subject: Ordnance Corps Historical Summary (Part I only), St. Louis Ordnance Plant, dated 1 July - 31 December 1955.

1961. Attorney's Report from L. Sissel, Attorney, Corps of Engineers, subject: Disposal of 77.79 Acres of Land Located at Tyson Valley Powder Farm, St. Louis County, Missouri, dated 18 July 1961.

1962. Memorandum from J. W. Harrop, Chief, Property Division, General Services Administration, Kansas City, Missouri, to "File", subject: Tyson Valley Powder Farm, dated July 2, 1962.

1963. Letter from E. Lyle Knight, Regional Representative, Division of Surplus Property Utilization, Department of Health, Education and Welfare to J. Wayne Harrop, Chief, Real Property Division, GSA, concerning transfer of Tyson Valley Powder Farm property (deed attached), dated October 11, 1963.

1960. Lease Agreement between Secretary of the Army and Indianapolis Grain Warehouse Corp., dated October 1960.

1992. Newspaper clipping from St. Louis Post-Dispatch, concerning brief history of Lone Elk Park, titled: Lone Elk's Story Blends Luck, Lore, Compassion, dated December 21, 1992.

UNK. Report from Washington University, subject: Application for Acquisition of Tyson Valley Powder Farm in St. Louis County, Missouri.

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF THE DISTRICT ENGINEER
ST. LOUIS MISSOURI ENGINEER DISTRICT
Room 800 U. S. Court House and Custom House

Refer to File No. UMLVA

28 January 1947

SUBJECT: Transfer of Tyson Valley Powder Farm to Disposal Agency

THROUGH: The Division Engineer
Upper Mississippi Valley Division
Corps of Engineers
War Department
St. Louis 1, Missouri

TO: The Chief of Engineers
War Department
Washington 25, D. C.

ATTENTION: Real Estate Branch

1. This office at present has accountability for the Tyson Valley Powder Farm, a storage area used in connection with the operation of the St. Louis Ordnance Plant, St. Louis, Missouri. Since accountability has been held approximately eleven months and since it is considered desirable to transfer this property to the property Disposal Agency at the earliest possible date a brief history of the transactions involved in the disposal is set forth below:

a. Accountability accepted from the Commanding Officer, St. Louis Ordnance Plant, on 21 February 1946.

b. Declaration of Surplus made to the Disposal Agency on 10 May 1946.

c. Letter received from the Federal Land Bank, dated 5 September 1946, stating that the Federal Farm Mortgage Corporation was ready to accept transfer immediately and requesting certain information.

d. Letter forwarded from St. Louis District to Missouri River Division, dated 9 September 1946, requesting information for Federal Farm Mortgage Corporation.

e. 2d Indorsement from Missouri River Division, dated 13 September 1946, furnished information requested and stated that the Commanding Officer, St. Louis Administration Center, was being requested to furnish a statement of decontamination.

f. Letter from Missouri River Division to Commanding Officer, St. Louis Administration Center, dated 13 September 1946, requesting Certificate of Decontamination, was forwarded to the St. Louis District by

SUBJECT: Transfer of Tyson Valley Powder Farm to Disposal Agency
(ltr. UMLVA to OCE, through UMVD, 28 January 1947)

j. Teletype from St. Louis District to Missouri River Division, dated 29 October 1946, reporting discovery of buried live ammunition. This teletype quoted by Missouri River Division to Office, Chief of Engineers, by teletype reference MRD RM 261, dated 29 October 1946.

k. Air mail communication from Missouri River Division to St. Louis District, dated 6 December 1946, read as follows: "Reurtt UMLKV-762 29 October 1946, Subj: Transfer of Tyson Valley Powder Farm to Disposal Agency, the following teletype from Office of the Chief of Engineers is quoted-- "Correspondence with Ordnance determines decontamination subject installation responsibility ordnance DE. Matter placed with Chief of Ord for immediate action thru their channels. 4620 ENGLT" End MRDRM."

No communications relative to this matter have been received since the air mail communication of 6 December 1946.

2. While this office maintains only a caretaker at the Tyson Valley Powder Farm, the cost of maintaining this property still amounts to \$564.00 per month and the property is still not available for transfer to the Disposal Agency and subsequent sale or lease. In view of the fact that over eight months have elapsed since this property was declared surplus and approximately five months have elapsed since the Federal Farm Mortgage Corporation indicated its willingness to accept this property, it is requested that action be taken to settle the question of decontamination so that this property may be disposed of.

R. E. SMYSER, JR.
Colonel, Corps of Engineers
District Engineer

cc: The Division Engineer
Missouri River Division
206 South 19th Street
Omaha 2, Nebraska
ATTENTION: Real Estate Branch

C
O
P
Y

In Reply Refer to: RSL-PPM-V.O.Karsnick

March 4, 1947

Division Engineer
Missouri River Division
511 Farm Credit Building
Omaha 2, Nebraska

Subject: Decontamination - Tyson Valley
Powder Farm, W-Mo-4-B-WD-701

Gentlemen:

This office has been contacted by the St. Louis District Engineer Office and by Captain A. B. Luter, 9800th TSU-CE, of this office in connection with decontamination and custody at Tyson Valley Powder Farm.

This office has discussed the assumption of custody and accountability of this facility with Mr. J. M. Huston, District Supervisor, Surplus Property Disposal, Federal Land Bank of St. Louis, and the requirements of both agencies for decontamination prior to acceptance are as follows:

1. A firm statement is required that the entire facility including lands, structures, other improvements and equipment have been decontaminated or are not considered contaminated and are safe for any use with the exception of any area or areas which are not completely decontaminated. Areas which are not completely decontaminated must be identified; a statement that the area or areas are fenced and posted, if such is the case, should be included; a general area map showing boundaries of contaminated areas is required; "metes and bounds" description of land areas is not required.
2. In the case of any areas or other items which are not considered completely decontaminated and safe for any use recommendation of the owning agencies for final decontamination are required.

In reply refer to:
BSL-FPM-V.O. Karamick

April 15, 1947

AIR-MAIL

Mr. A. J. Wilson
Deputy Director
Property Management Division
Office of Real Property Disposal
Washington 25, D. C.

ATTENTION: Mr. James A. Forney
Decontamination Section
SUBJECT: Tyson Valley Powder Farm
W-No-4B
Bucklin, Missouri

Dear Mr. Wilson:

Please be advised that this office is preparing to assume custody and accountability of the Tyson Valley Powder Farm, WAA Case No. W-No-4B. The present contemplated plans are for a simultaneous transfer to the Farm Credit Administration for disposal upon assumption of custody and accountability by this office.

In connection with the decontamination at this facility, this office is in receipt of a decontamination report which was transmitted as Block No. 6 - Schedule "D" of a withdrawal SPB-5 on .99 acres of land at this facility. We are transmitting herewith a copy of the decontamination report which accompanied the information copy of the SPB-5 received by this office on the contaminated land at this facility. Also accompanying the information copy of the SPB-5 were perimeter descriptions of the contaminated area and a general area plan showing the location of the contaminated area.

The Corps of Engineers, St. Louis Engineer District, advises that underground and above-ground gasoline and fuel oil storage tanks will be prepared for standby prior to assumption of custody by this office. The Corps of Engineers have been advised by this office that so long as standby preparation of these items, in accordance with TB-Eng-66, is accomplished this office will accept custody.

There is also transmitted herewith a copy of the Preliminary Survey Report, dated March 24, 1947, on this facility and reference is made to Items XIII and XVI of said report concerning occupancy by the Atomic Energy Commission of certain buildings at this facility. In

ORDNANCE AND EXPLOSIVE WASTE
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DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX K - ARCHIVES ADDRESSES

1. National Archives
Suitland Branch
4205 Suitland Road
Suitland, Maryland
2. Washington National Records Center
4205 Suitland Road
Suitland, Maryland
3. U.S. Army Military History Institute
Carlisle Barracks
Carlisle, Pennsylvania
4. U.S. Air Force Historical Research Center
Maxwell Air Force Base, Alabama
5. National Personnel Records Center
9700 Page Boulevard
St. Louis, Missouri 63132
6. National Archives - Central Plains Region
2312 East Bannister Road
Kansas City, Missouri 64131
7. National Records Center
2312 East Bannister Road
Kansas City, Missouri 64131
8. National Archives - South West Region
501 West Felix Street
Fort Worth, Texas 76115

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 30 November 1993

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION		
TYSON VALLEY/LONE ELK PARK - TYSON VALLEY/WASHINGTON UNIVERSITY		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
Rochelle Ross	CELMS-PM-M	314-331-8784
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
Susan Hannasch	Legal Counsel at Wash. U.	314-935-5266

SUMMARY OF CONVERSATION:

I told her that I had talked to Richard Coles and he had told me that she had some files on Tyson Valley. I asked Susan if it would be possible to get a copy of those files or to stop by and look through them and make copies of what we are interested in. After talking further with her, I realized that I probably already had a copy of her files which were given to me by Dan Ahern.

Like Richard, she has not heard of anyone finding any live munitions. But there are several casings lying around the Popping Kettle Building.

She stated that Richard would like to see that area around the Popping Kettle Building cleaned up. There are several buried barrels.

I explained to her how the program works. That we write reports which go to Huntsville with our recommendation and they make the final decision whether or not the area is a threat and needs to be cleaned up. And depending on how much money they have and what other areas are in need of rehabilitation, the area may be cleaned.

She said she would get in contact with Richard about our site visit.

DECEMBER 2, 1993

SUBJECT: Interview with Mr. Richard Coles and Mr. David Schilling of Tyson Valley Research Center during Site Visit for Tyson Valley Powder Farm. Site Number B07MO0173.

1. SLD Personnel present

Rochelle Ross
George Sloan
Charles Camillo

2. The above personnel met with Richard Coles on Wednesday, December 2 to discuss the former and current uses of Tyson Valley. There were a few areas we were mostly interested in and there were some areas that he would like to see cleaned up.

3. We first went to an area which was mentioned in a letter from a gentleman where casings were buried. Kansas City has been to the area and has monitoring wells set up to detect any hazardous material in the soil as it would drain to the creekbed. The second area we were interested in is where they had burning tables. There are two tables still in tact and monitoring wells have been placed around that area also. The third area is one of the areas which Richard would like to see cleaned. This area is in the north east corner. Located on the site is a Popping Kettle building which is now used as a photo blind for bird watchers. Down the hill to the creekbed are several barrels and piles of casings and bullets. One barrel has Cyanide on the side. The barrels are buried into the hill side. We were unable to pinpoint how many there are. There are red areas in the surrounding soil. This may be from lead based paint. This creek drains off of the site and into the Meremac River. Next we travelled to the Chemical Warehouses. These are being used as art studios. There is documentation stating that the area has been decontaminated. Our research states that everything has been decontaminated except for an area 290 ft north of Vault No. 1. We went to that area. We could not visibly see anything but are pretty sure we located the area. The soil slope in the area does not blend in with the area around it. We went to an area near some buildings which were apparently built before the Korean War. Toward the creek from these buildings is an area where a rusty substance is coming from the soil and into the creek. It is believed that there are office supplies and equipment which may be buried in between the creek and the buildings.

4. Almost all but 3 or 4 of the bunkers and vaults are being used as storage, libraries, or laboratories. The chemical warehouses are used as art studios and other similar activities. The Popping Kettle Building is used as a photo blind for bird watchers. Located on the property is a wolf sanctuary, a bird sanctuary, and various other research projects.

5. A few years ago, a gentleman from the Post Dispatch was out at

APPENDIX F

**NEWSPAPERS/JOURNALS
(NOT USED)**

APPENDIX G

PRESENT SITE PHOTOGRAPHS

**ORDNANCE AND EXPLOSIVE WASTE
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ARCHIVES SEARCH REPORT
FINDINGS
FOR
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AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179 .

APPENDIX G

PRESENT SITE PHOTOGRAPHS

Page G-1

**PHOTO #1 - FORMER "POPPING KETTLE BUILDING"; NOW USED AS A
PHOTO BLIND**

**PHOTO #2 - SEVERAL BARRELS LOCATED IN CREEK DOWN FROM THE
"POPPING KETTLE BUILDING"**

Page G-2

PHOTO #3 - BARREL MARKED "CYANIDE" IN CREEK

PHOTO #4 - PILE OF SHELL CASINGS IN CREEK BED

Page G-3

**PHOTO #5 - CREEK FLOWS THROUGH CULVERT AND OFF THE PROPERTY
INTO THE MERAMEC RIVER**

PHOTO #6 - P.E.T.N. VAULT NO. 1 AREA, LOOKING NORTH

Page G-4

PHOTO #7 - P.E.T.N. VAULT NO. 1 AREA, LOOKING SOUTH

PHOTO #8 - P.E.T.N. VAULT NO. 1 AREA, LOOKING WEST



PHOTO #1
FORMER "POPPING KETTLE BUILDING"; NOW USED
AS A PHOTO BLIND



PHOTO #2
SEVERAL BARRELS LOCATED IN CREEK DOWN FROM THE
"POPPING KETTLE BUILDING"



PHOTO #3
BARREL MARKED "CYANIDE" IN CREEK



PHOTO #4
PILE OF SHELL CASINGS IN CREEK BED

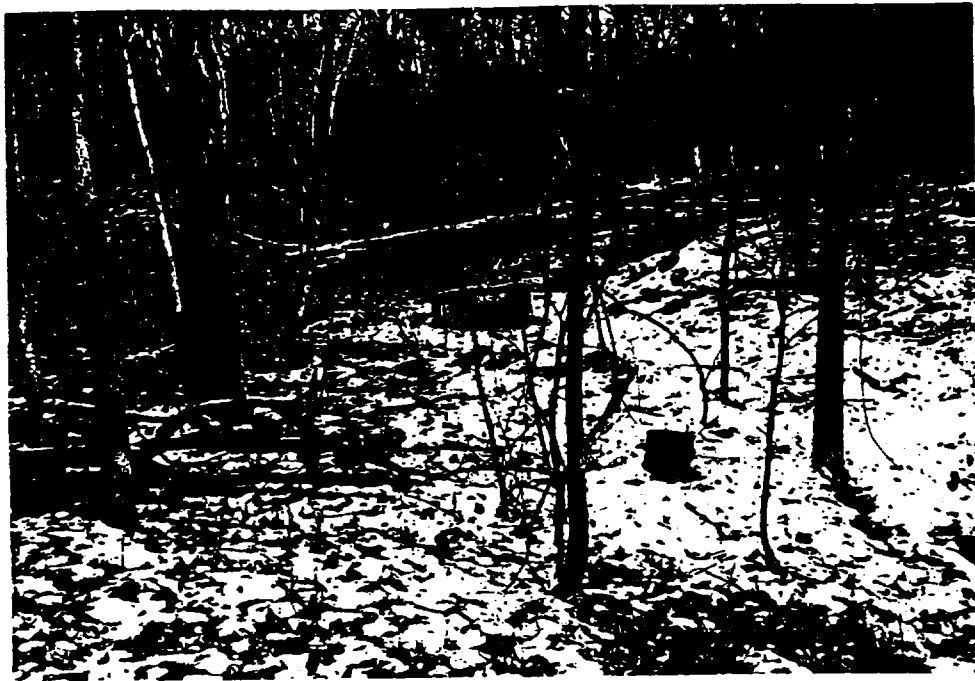


PHOTO #5
CREEK FLOWS THROUGH CULVERT AND OFF THE PROPERTY
INTO THE MERAMEC RIVER



PHOTO #6
P.E.T.N. VAULT NO. 1 AREA, LOOKING NORTH



PHOTO #7
P.E.T.N. VAULT NO. 1 AREA, LOOKING SOUTH



PHOTO #8
P.E.T.N. VAULT NO. 1 AREA, LOOKING WEST



PHOTO #9
CHEMICAL WAREHOUSES

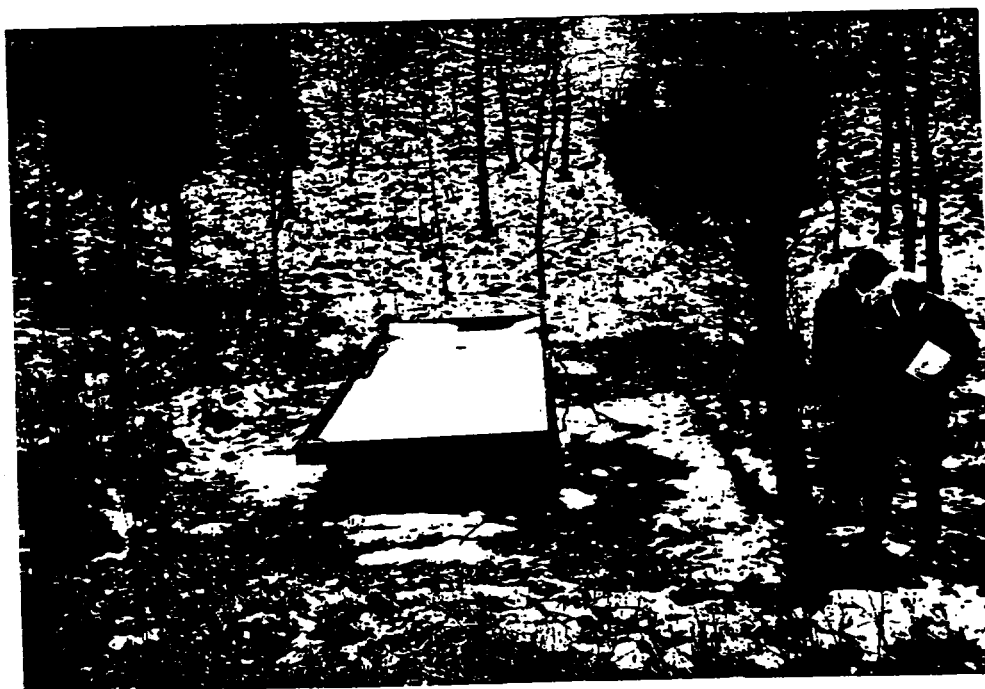


PHOTO #10
BURNING TABLE

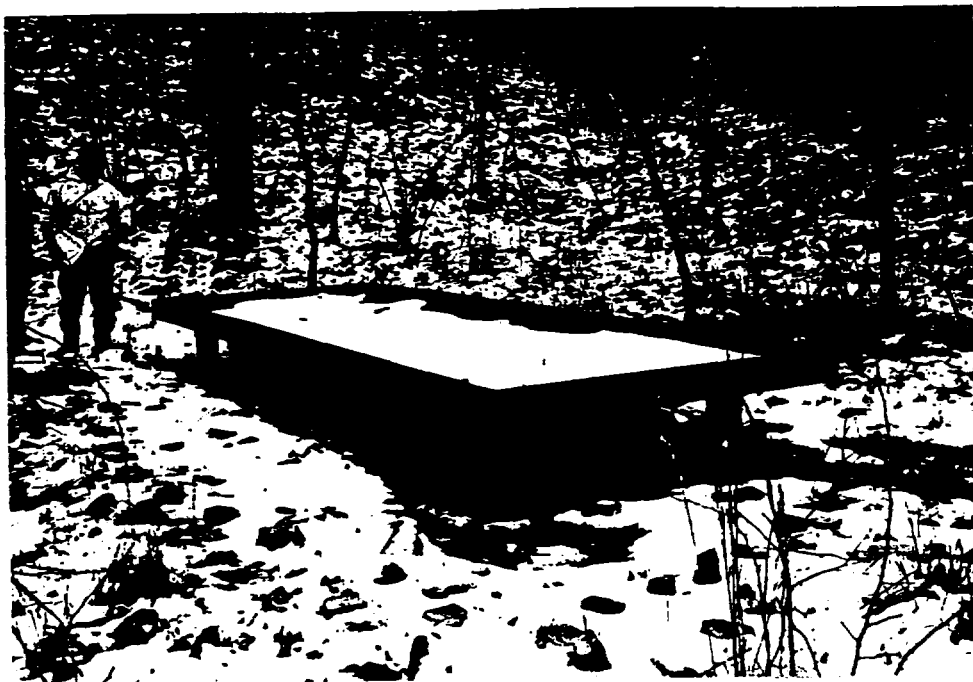


PHOTO #11
BURNING TABLE



PHOTO #12
BURNING TABLE



PHOTO #13
AREA NORTH OF BUNKER #52



PHOTO #14
RUST-COLORED SUBSTANCE FLOWING OUT OF SIDE OF CREEK.
POSSIBLE DUMP SITE BETWEEN CREEK AND BUILDING



PHOTO #15
FIRING RANGE IN LONE ELK COUNTY PARK

APPENDIX H

**HISTORICAL MAPS/DRAWINGS
(NOT USED)**

APPENDIX I

OEW RISK ASSESSMENT CODE FORM

10 Feb 93

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

TYSON VALLEY POWDER FARM &

Site Name	<u>LONE ELK COUNTY PARK</u>	Rater's Name	<u>Rochelle Ross</u>
Site Location	<u>ST. LOUIS CO., MO</u>	Phone No.	<u>314-331-8784</u>
DERP Project#	<u>B07MO0173 & B07MO0179</u>	Organization	<u>CELMS-PM-M</u>
Date Completed	<u>19 JANUARY 1994</u>	RAC Score	<u>3</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at this site. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	(6)
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	(1)
Conventional Ordnance and Ammunition (Select the largest single value)	<u>6</u>

What evidence do you have regarding conventional OEW? Small arms
ammunition was stored and fired. 105mm shells (empty) were stored.

B. Pyrotechnics (For munitions not described above)

VALUE

Munition (Container) containing
White Phosphorus or other
Pyrophoric Material (i.e.,
Spontaneously Flammable)

10

Munitions Containing A Flame
or Incendiary Material (i.e.,
Napalm, Triethylaluminum Metal
Incendiaries)

6

Flares, Signals, Simulators

4

Pyrotechnics (Select the largest single value)

0

What evidence do you have regarding pyrotechnics? Incendiary material
was stored, but not in the munitions.

C. Bulk High Explosives (Not an integral part of conventional ordnance;
uncontainerized.)

VALUE

Primary or Initiating Explosives
(Lead Styphnate, Lead Azide,
Nitroglycerin, Mercury Azide,
Mercury Fulminate, Tetracene, etc.)

10

Demolition Charges

10

Secondary Explosives
(PETN, Compositions A, B, C
Tetryl, TNT, RDX, HMX, HBX,
Black Powder, etc.)

8

Military Dynamite

6

Less Sensitive Explosives
(Ammonium Nitrate, Explosive D, etc.)

3

High Explosives (Select the largest single value)

8

What evidence do you have regarding bulk explosives? TNT, PETN, and
black powder were stored in bulk at Tyson Valley.

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or
other conventional ordnance; uncontainerized)

VALUE

Solid or Liquid Propellants

6

Propellants

0

What evidence do you have regarding bulk propellants? _____

E. Radiological/Chemical Agent/Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear, incendiary and smoke)	5
Radiological/Chemical Agent (Select the largest single value	<u>0</u>
What evidence do you have regarding chemical/radiological OEW? <u>Tests</u> <u>for Radiological contamination were conducted. Results were negative.</u>	

Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 14
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Value
CATASTROPHIC	I	≥21
CRITICAL	II	≥10 <21
MARGINAL	III	≥5 <10
NEGLIGIBLE	IV	≥1 <5
**NONE		0

* Apply Hazard Severity Category to Table 3

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings and Structures	3
Subsurface	(2)
Location (Select the single largest value)	<u>5</u>

What evidence do you have regarding location of OEW? Hundreds of shells are located near the Popping Kettle Building.

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	(4)
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	<u>4</u>

What are the nearest inhabited structures? Roads, Maintenance Building, Wolf Sanctuary.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	(2)
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	<u>2</u>
Narrative	

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	(3)
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	<u>5</u>
Describe types of buildings in the area.	<u>Tyson Valley is now Washington University Research Center.</u>

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	<u>0</u>
Describe the site accessibility. <u>Electrically operated fence at the entrance. A fence surrounds the entire Tyson area.</u>	

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	<u>0</u>
Describe the site dynamics. _____	

=====

Total Hazard Probability Value
 (Sum of Largest Values for A through F--Maximum of 30) 16
 Apply this value to Hazard Probability Table 2 to determine
 Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	A	≥27
PROBABLE	B	≥21<27
OCCASIONAL	Ⓒ	≥15<21
REMOTE	D	≥ 8<15
IMPROBABLE	E	<8

* Apply Hazard Probability Level to Table 3.

=====

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1 Imminent Hazard - Expedite INPR - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968
- RAC 2 High priority on completion of INPR - Recommend further action by CEHND.
- RAC 3 Complete INPR - Recommend further action by CEHND.
- RAC 4 Complete INPR - Recommend further action by CEHND.
- RAC 5 Recommend no further action. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

There are two potential burial sites at Tyson Valley -

(1). located 290 feet north of PETN Vault #1, and (2). between the creek and warehouse building. There is also potential contamination in the Popping Kettle Building area - hundreds of shell casings and several partially buried barrels; one with Cyanide printed on the side. School children and other public groups visit this area often to bird watch.

REPORT DISTRIBUTION LIST

APPENDIX J

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179 .

APPENDIX J

REPORT DISTRIBUTION LIST

<u>Addressee</u>	<u>No. Copies</u>
Commander, U.S. Army Engineer Division Huntsville, ATTN: CEHND-ED-SY P.O. Box 1600 Huntsville, Alabama 35807-4301	2
Commander, U.S. Army Chemical Materiel Destruction Agency ATTN: SFIL-NSM (Vern Skinner), Bldg. E4585 Aberdeen Proving Ground, Maryland 21010	1
Commander, U.S. Army Chemical & Biological Defense Command ATTN: AMSCB-CIL, Bldg. E5183 Aberdeen Proving Ground, Maryland 21010-5423	1
Commander, U.S. Army Corps of Engineers, Kansas City District ATTN: CEMRK-ED-T (Josephine Newton) 700 Federal Building 601 East Twelfth Street Kansas City, Missouri 64106-2896	1
CELMS-ED-G	1
CELMS-ED-H	1
CELMS-PD	1
CELMS-PD-A	1
CELMS-PM	1

APPENDIX K

ARCHIVES ADDRESSES

Chief of Engineers
Office, Chief of Engineers
Department of the Army
Washington 25, D. C.

Attn: Harry O'Neill, Assistant Management and
Disposal Division - Real Estate

Dear Sir:

Reference is made to a conversation of October 19, 1949, between Mr. O'Neill of your office and Mr. James A. Fornay of this Administration regarding contaminated land areas at surplus facilities.

At the present time, there remains in our inventory approximately 61 acres of land in industrial facilities which are undisposible due to contamination from T.N.T., Nitrolyl, Pentolite, loaded fuses, boosters and detonators. Following is the location of these areas by facility:

Tyson Valley Powder Farm, Eureka, Missouri	.99 acres
Coosa River Ordnance Plant, Talladega, Alabama	1.0 "
Sangamon Ordnance Plant, Illinois, Illinois	55.0 "
Vigo Ordnance Plant, Terre Haute, Indiana	4.0 "

These areas are comprised of burning grounds, where the plant operators attempted to destroy faulty ammunition, and are located in the non-industrial portions of the facilities.

There was no intention on the part of this Administration to accept for disposal under the Surplus Property Act any property which was in such condition as to make it either impossible of decontamination, or property which had not been decontaminated because of a determination that such action was not economically feasible.

Attached, for your information, are estimates of the cost of decontaminating the subject areas. Inasmuch as budgetary limitations preclude this Administration from effecting the necessary decontamination, it is requested that the Department of the Army initiate decontamination proceedings at their expense or withdraw the property from surplus.

Sincerely yours,

JAFornay/peg/2401
Rm. 2706-Alcott Hall
October 28, 1949

AJWILSON _____ PM

Attachment:

cc: Liquidator - AA

whatever concentration, in deposits in the premises together with the
rest of the party of the first part through its authorized agents or

UNITED STATES OF AMERICA
WAR ASSETS ADMINISTRATIONForm approved.
Budget Bureau No. 16R005.3.**DECLARATION OF SURPLUS REAL PROPERTY**
(TO THE WAR ASSETS ADMINISTRATOR, WASHINGTON 25, D. C.)**IMPORTANT**

SEE INSTRUCTIONS ON REVERSE FOR COMPLETING THIS FORM

REPORTING AGENCY **Department of the Army
Corps of Engineers
Washington 25, D. C.**PROPERTY IDENTIFICATION **Tyson Valley Powder Farm, Missouri
(St. Louis Ordnance Plant). Approximately 25 miles
southwest of the City of St. Louis, in St. Louis County**
AREA

USE OF PROPERTY PRIOR TO ACQUISITION

OPINION OF BEST FUTURE USE

DATE OF ACQUISITION

PRIOR TO 1/1/40 ☐MIXED ☐SUBSEQUENT TO 12/31/39 ☐

FORMER OWNER

1. DATE

21 DEC 1949

2. REPORTING AGENCY No.

WD-701-C

3. WAA No.

W-MO-46

4. DISPOSAL AGENCY No.

5. REPRESENTATIVES TO CONTACT

6. LOCATION OF TITLE PAPERS

7. COST OF PROPERTY

ACQUISITIONS \$

BETTERMENTS \$

TOTAL \$

8. PROCEEDS

REMARKS

**CORRECTION
TYSON VALLEY POWDER FARM, MISSOURI
(ST. LOUIS ORDNANCE PLANT)**

This Correction to Form SPB-5, Reporting Agency No. WD-701, dated 10 May 1946 and Supplement No. WD-701-B, dated 29 April 1947, is for the purpose of changing the decontamination classification on the .99 acre of land on subject installation. The required information is contained in Schedule "A" attached hereto.

CORRECTIONWK
12/28/49

DO NOT FILL IN

DATE OF ASSIGNMENT

ASSIGNED TO

ASSIGNED BY

(SIGNATURE)

17. AUTHORIZED BY **CHIEF OF ENGINEERS**

(SIGNATURE OF REPORTING OFFICIAL)

EDWARD J. FANFLIX**Chief, Management & Disposal Division
Real Estate**

GSA, WAR ASSETS

(DIVISION)

(NAME AND TITLE) Please type

DICK W. ARGEISINER
1st Lt., Corps of Engineers

The .00 acre of land within the Tyson Valley Powder Farm, Missouri (also known as St. Louis Ordnance Plant Magazine and Range), located approximately 25 miles southwest of the City of St. Louis, in St. Louis County, Missouri, has been given a soil analysis and found to be free of danger to animal life. It is recommended that the area remain fenced and posted and be used for grazing purposes only.

20 December 1949

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON 25, D.C.
CERTIFICATE OF CLEARANCE

FORM 1055

Cartridge Cases Dug Up in Park



Contaminated brass cartridge casings excavated from a dump in Tyson Valley Park being loaded into a scrap dealer's truck last week. At right, casings as they appeared when first excavated.

Recovery of Cartridge Casings Is Curbed at Tyson Valley Park

Ammunition Center Commander Warns Contaminated Brass Is Health Hazard and Might Ruin Other Scrap.

Clarence Wohlschlaeger, superintendent of the park since Sept. 3, has been ordered to stop his large-scale recovery of contaminated brass cartridge casings from a dump where they had been buried. The casings would get into the park was used as a powder store during the war, it was learned today.

Wohlschlaeger, with the help of several men, had been digging up the casings, mainly for 30 and 50-caliber small arm ammunition, and selling them for scrap to the Finer Iron & Metal Co., 5950 Manchester avenue, for a reported price of 12 cents a pound.

After ending Wohlschlaeger's private operation Monday, County Supervisor Luman F. Matthews yesterday authorized Ash Finer of the scrap metal firm to remove the estimated 200 tons of casings with a steam shovel. Finer will pay the county 10 cents a pound or \$200 a ton.

Matthews said he had given permission last year to a squatter in the park to salvage any shell casings he could find on a rifle range in the park. When Wohlschlaeger came to him about a week ago with a request for permission to dig out the contaminated casings, Matthews said he thought it was the type of operation and granted it. However, Lt. Col. T. E. Wood, commanding officer of the third Small Arms Ammunition Center which is taking possession of the rubber gloves.

The contamination was caused by mercurous nitrate which is used in testing ammunition during the manufacturing process. Cartridges so tested were sprayed and then buried in the ground to avoid just such a possibility, Col. Wood said. He had expressed concern that some of the contaminated brass would get back into ordnance supplies and cause manufacturing trouble.

On examining the diggings at the park, Matthews said, he was astonished at the size of the excavation, made with the help of park bulldozers, and ordered Wohlschlaeger to cover up the hole at once. He has also arranged with Finer for an accounting of all sums paid Wohlschlaeger. Such sums belong to the county, Matthews said, after deduction of labor expense incurred by the park superintendent.

Finer has said he will put the casings through a decontamination process before selling them and will dispose of them only for the manufacture of sheet brass. He explained that on receiving a warning from Col. Wood last week, he instructed the officers to

PART I

ST. LOUIS CROMANCE PLANT

NPRC
338-5220636
BOX 2024
FILE 319.1

ORDNANCE CORPS HISTORICAL SUMMARY

1 July - 31 December 1955

in

THREE PARTS

PART I

ST. LOUIS ORDNANCE PLANT

PART II

McQUAY-NORRIS MANUFACTURING COMPANY,
CONTRACTOR-OPERATOR, CORE DIVISION

PART III

UNITED STATES DEFENSE CORPORATION
CONTRACTOR-OPERATOR, AMMUNITION DIVISION

HISTORICAL SUMMARY

1 July - 31 December 1955

Completed: 12 March 1956

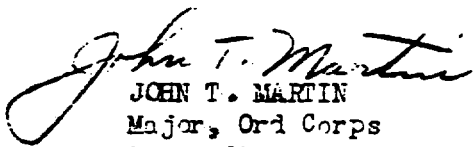
ST. LOUIS ORDNANCE PLANT
4300 Goodfellow Boulevard
St. Louis 20, Missouri

PREPARED BY:



H. J. HARTMANN
Chief, Office of Executive Functions

APPROVED BY:



JOHN T. MARTIN
Major, Ord Corps
Commanding

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A P P E N D I X

1. Organization Chart, St. Louis Ordnance Plant, effective 25 October 1955.

I. ACTIVATION

1. Effective 1 August 1951, the St. Louis Ordnance Plant was established as a Class II Industrial Installation under the jurisdiction of the Chief of Ordnance and was placed on active status in accordance with Department of Army, General Orders 82, dated 14 September 1951. The same General Orders further provided that effective 1 September 1951, the St. Louis Core Plant, which was a Class II Industrial Installation under the jurisdiction of the Chief of Ordnance, was redesignated a Class II activity under the jurisdiction of the Chief of Ordnance at the St. Louis Ordnance Plant.

2. On 12 September 1951, the 8877th TSU was activated at the Plant by Ordnance Corps General Order 8-51, dated 12 September 1951.

3. On 1 February 1952, the St. Louis Core Plant and the St. Louis Shell Plant were discontinued as separate installations and their functions consolidated with the St. Louis Ordnance Plant by Department of the Army General Orders 25, dated 29 February 1952.

4. Upon discontinuance of the St. Louis Administration Center effective 1 May 1952 in accordance with General Orders No. 46, Department of the Army, 2 May 1952, and General Orders No. 61, Headquarters Fifth Army, 26 May 1952, the supply service and maintenance responsibilities of that Center were assumed by the St. Louis Ordnance Plant.

II. MISSION

Ordnance Ammunition Command Order No. 24-55, dated 1 November 1955, assigns the mission of the St. Louis Ordnance Plant and delegates to the Commanding Officer the authority necessary to accomplish the assigned mission. The St. Louis Ordnance Plant is a Class II Government-owned, Contractor-operated, military industrial installation under the jurisdiction of the Ordnance Ammunition Command. It is assigned the general responsibilities of:

- a. Producing completed small arms ammunition as assigned.
- b. Producing small arms ammunition cores as required by Ordnance Ammunition Command small arms plants.
- c. Producing artillery shell component items as assigned.
- d. Maintaining facilities, equipment, buildings, and associated utilities, while in standby status (including Weldon Spring Ordnance Works) in such condition as will permit rehabilitation and resumption of production within the time limitation prescribed by Ordnance Ammunition Command.
- e. Providing inspection and test facilities and performing proof testing of small arms ammunition.
- f. Performing receipt, surveillance, maintenance, renovation, demilitarization, salvage, storage and issue of assigned ammunition items.
- g. Effecting purchases of necessary supplies and equipment within regulatory limitations.
- h. Conducting mobilization planning.

III. ORGANIZATION

1. Effective 25 October 1955, several organizational changes were effected. Since the position of Civilian Executive Assistant is not considered a special staff function but an assistant to the Commanding Officer and Executive Officer in a staff capacity, the position is shown organizationally separate to reflect that duty. The Safety Division was redesignated as the Safety and Security Division. The Core Branch, Inspection Division is no longer in operation. The functions of the Process Control Branch and Building, Maintenance and Construction Branch, Operations Review Division have been assigned to the headquarters of the division and the Branches deleted.

2. The Ordnance Small Arms Inspection Equipment Stores activity under the technical supervision of Ordnance Ammunition Command and assigned to this Plant for administration was transferred to Lake City Arsenal, 30 September 1955.

3. Attached as Appendix 1 is Organization Chart of the St. Louis Ordnance Plant, dated 25 October 1955.

IV. PERSONNEL

1. Military.

a. Technical Service Unit: 09-8877.

(1) Officers on duty as of 1 July 1955:

- (a) Lieutenant Colonel James H. Bash, 0310183, Ord Corps, Commanding.
- (b) Major Ralph W. Brubaker, 01575796, Ord Corps, Technical Operations Officer.
- (c) Major John T. Martin, 01179521, Ord Corps, Munitions Production Officer.
- (d) Major Eilert A. Schwerdtfeger, 01552379, Ord Corps, Assistant Technical Operations Officer, reassigned principal duty as Technical Operations Officer.
- (e) Captain Charles E. Ramsey, 01031208, Ord Corps, Executive Officer.
- (f) Captain Royal C. Lewis, 01548918, Ord Corps, Safety Officer.

(2) Officers assigned during period 1 July 1955 to 31 December 1955: None.

(3) Officers transferred during period 1 July 1955 to 31 December 1955:

- (a) Major Ralph W. Brubaker, 01575796, Ord Corps, relieved from assigned and reassigned to Ft. Hamilton, New York for further assignment to 7507th AU NG ADGRU, Ft. Brooke, Puerto Rico, effective 25 October 1955.

(b) Major Eilert A. Schwerdtfeger, 01552379,
Ord Corps, relieved from assigned and
reassigned to 5017th SU, 6th Armored Division
and Ft. Leonard Wood, Missouri, effective
28 November 1955 for purpose of being re-
lieved from active duty.

2. Civilian.

The civilian personnel strength, St. Louis Ordnance Plant,
was as follows:

	<u>AUTHORIZED</u>		
	<u>Class Act</u>	<u>Wage Board</u>	<u>Total</u>
1 July 1955	93	100	193
31 December 1955	42	25	67
	<u>ASSIGNED</u>		
1 July 1955	88	68	156
31 December 1955	42	25	67

V. REHABILITATION

1. The rehabilitation program has been progressive, and as of 1 July 1955, and 31 December 1955, respectively, the status of the various projects was as follows:

<u>1 July 1955</u>	<u>31 December 1955</u>
<u>% Complete</u>	<u>% Complete</u>
Rehabilitation, Building 111 (Boiler House).40%	Rehabilitation, Building 111 (Boiler House).97%
Rehabilitation, Building 2052%	Rehabilitation, Building 20535%
Rehabilitation, No. 2 Chemical Area0%	Rehabilitation, No. 2 Chemical Area30%
Rehabilitation, No. 1 Chemical Area0%	Rehabilitation No. 1 Chemical Area63%
Building 113, (Sprinkler System). . . .0%	Building 113, (Sprinkler System). . . .15%

2. During July 1955, the McCarthy Construction Company started the rehabilitation of the No. 2 Chemical Area. The rebuilding of the incinerator, Building 116, was completed with enlarged capacity and improvement in the baffles to eliminate smoke emission. The Master File Control - Index File pertaining to drawings, specifications, publications, process records and other technical data was turned over to the United States Defense Corporation due to reduction in personnel.

3. A contract let by the United States Defense Corporation for the repair of railroad crossings was completed. Tuckpointing

in the Shell Division Area was completed during August 1955.

4. During September 1955, Russel and Axon prepared plans and specifications for the elimination of drop out of fly ash in the precipitator ducts in Building 211. United States Defense Corporation will award a contract to accomplish this work. MacDonald Construction Company started work on the rehabilitation of No. 1 Chemical Area.

5. Considerable difficulty was encountered in the humidity control system in Building 207, during the month of October 1955; however, several modifications have been made by the Corps of Engineers and the system is now functioning properly. During the rehabilitation of electric lines in the No. 2 Chemical Area, it was found that the conduit had rusted to an extent which rendered it unserviceable. The Corps of Engineers were requested to replace all underground electric conduit.

6. During November 1955, several breaks in the watermain in the No. 2 Chemical Area caused concern as to the condition of the distribution mains. A representative of the Cast Iron Pipe Research Institute was called in and it was found that some electrolysis was present and bacterial action adjacent to the leadite joints was attacking the cast iron. However, it was the representative's opinion that the condition was not serious enough to warrant the replacement of the entire system.

7. In December 1955, the Rockwood Sprinkler Company started the installation of the sprinkler system in the McQuay-Norris Manufacturing Company Area.

VI. FACILITIES

With the exception of the following the physical facilities of the St. Louis Ordnance Plant remain the same as previously reported.

a. Tyson Area. With the concurrence of the Commanding General, Ordnance Ammunition Command, Joliet, Illinois, the supporting area of the St. Louis Ordnance Plant located approximately twenty-five miles southwest on United States Highway 66, five miles west of Valley Park, Missouri, commonly known and referred to as Tyson Valley; Tyson Valley Farm; Storage Area, etc., was designated and is to be referred to as the Tyson Area of the St. Louis Ordnance Plant, effective 14 July 1955.

b. The move of Department of Defense, Military Personnel Records Center, from Buildings 203, 204 and related buildings, to 9700 Page Boulevard, St. Louis 14, Missouri, was about 75% completed on 29 December 1955.

VII. GENERAL

1. Boards, Committees and Programs.

a. The Board of Awards reestablished 26 February 1954, was abolished by Section I, Memorandum Number 36, this Plant, dated 20 July 1955.

b. The Work Order and Project Review Committee established 12 May 1954, was abolished by Section II, Memorandum Number 36, This Plant, dated 20 July 1955.

c. The Property Disposal Review Board established 16 March 1953, was reorganized by Section V, Memorandum Number 36, this Plant, dated 20 July 1955, to effect changes in membership.

d. The Industrial Planning Board established 5 February 1954, was reorganized by Section III, Memorandum Number 36, this Plant, dated 20 July 1955, to effect changes in membership.

e. The Safety Board established 7 April 1954, was reestablished 7 November 1955, to effect changes in membership.

f. A Board of Awards for the St. Louis Ordnance Plant was established as a one-time board to review Supplement No. 4 to Contract DA 23-068-ORD-5 with Chevrolet-Motor Division for maintenance of Shell Division, St. Louis Ordnance Plant from 13 December 1955 to 12 December 1956.

g. A Combined Charities Council was appointed for the Annual Combined Charities Drive, St. Louis Ordnance Plant, 4 August 1955, for the year 1955.

2. Weldon Spring Ordnance Works.

a. During July 1955, The Frank Horton Engineer Firm, La Mar, Missouri, sent representatives to Weldon Spring Ordnance Works to inventory Department of Army telephone facilities in preparation of a request to buy or lease the facilities. Formal request has not been completed.

b. Emergency water supply was furnished Weldon Spring Heights (Staff Housing Area), 3-4 September, by request of Representative Cannon, Ninth District. During this period rehabilitation of the wells to be taken over by the Atomic Energy Commission was initiated, including potential tests on motors, which was followed by request to transfer well pump motors and compensators.

c. During November 1955, a grazing lease was administered by Kansas City District Engineers to Morrison-Murray Hay Company, Manhattan, Kansas, beginning 15 November 1955 and expiring 14 November 1960, for an annual rental of \$3,276.51 payable in quarterly installments. In November, a request from the Associate Dean and Director, University of Missouri, was received for removal of all or part of catwalk in University of Missouri experimental farming area at Weldon Spring Ordnance Works. Permission has been granted subsequent to reporting period, under provisions that all of the structure be removed at no expense to the government and that Department of Army be absolved of all responsibility for injuries incurred or damages to government property.

d. During December, forty-eight transformers of varying sizes were transferred to the Atomic Energy Commission on a loan

basis for temporary use during construction period.

3. Engineering and Layaway.

a. A Master Layaway Plan for the entire St. Louis Ordnance Plant was prepared by this Plant, reviewed by Ordnance Ammunition Command and returned to this Plant for revision to incorporate \$550,000.00 for machine repairs in Building 103. This Plan was returned to Ordnance Ammunition Command in May 1955, and has been revised several times, latest revision was 12 December 1955.

b. Layaway project of Caliber .60 equipment was started on 30 August 1954 and finished 15 August 1955. Maintenance is being performed.

c. Standby, Caliber .30 equipment, Building 103, was started on 25 April 1955 and was finished 20 December 1955, at which time maintenance was started.

d. Standby, Caliber .30 equipment, Building 102, was started on 9 June 1955 and was finished 1 November 1955, at which time maintenance was started.

e. Standby, Core Plant was started 1 December 1955 and is now in progress.

f. Maintenance is also in effect for Caliber .50 equipment, Building 104 and 105 MM equipment in The Shell Division.

g. The Mobilization Plan was completed and is to be reviewed by the Industrial Planning Board.

4. Property.

a. Property Accountability.

- (1) Reports of Audit were made by Army Audit Agency for both Contractors, United States Defense Corporation and McQuay-Norris Manufacturing Company, covering all operations and procedures pertaining to Property Accountability.
- (2) Approximately 7,500 credit and debit vouchers were reviewed for correctness.
- (3) During October 1955, Transportation activities were turned over to the Contractor.
- (4) From 8 November 1955 to end of reporting period, approximately two-hundred Bills of Lading and fifteen Transportation Requests were reviewed and signed by the Transportation Officer.

b. Shell Division.

- (1) Activity of Shell Division, St. Louis Ordnance Plant, was in Phase II, Standby Maintenance of Contract DA 23-068-ORD-5 as of 13 December 1954. Supplemental Agreement No. 4, entered into on 12 December 1955, provided for second year

Standby Maintenance. Ordnance property personnel were required to operate the material cribs and issue all maintenance parts and supplies.

- (2) As of 16 March 1955, the property personnel of Ordnance began a 100% inventory of Class C inventory items. An Audit Report No. KC-STL-5218-55, covering a period 25 June 1955 through 25 October 1955, was received dated 6 December 1955. This report listed as a deficiency the fact that inventory of Class C property items was approximately 54% complete; however, Accountable Property Officer's control was considered adequate to protect the Government's interest. With reference to the deficiency, title of property was not actually established until 14 June 1955, and as of 31 December 1955 inventory and the establishment of accountable records is approximately 75% complete with 31 March 1956 target date to finalize this deficiency.

c. Purchase Review. The following purchase orders and requisitions were reviewed for the period 1 July through 31 December 1955. Dollar value of requisitions cannot be

determined as this office does not cite applicable funds.

<u>CONTRACTOR</u>	<u>REQUISITIONS</u>	<u>PURCHASE ORDERS</u>	<u>\$ VALUE</u>
USDC	66	3,132	\$1,672,082.28
McQuay-Norris	6	80	115,000.00

d. Shipping. The following end items were shipped:

(1) Bullet Cores

Caliber .30 Ball T104E2, FAT 21	2,215,000
Caliber .30 AP M2	72,735,000
Caliber .30 AP T93E2, FAT 29	<u>8,500</u>
Total Caliber .30	74,958,500
Caliber .50 APIT M20	<u>2,112,510</u>
Total Calibers .30 and .50	77,071,010

(2) Small Arms Ammunition

Caliber .30 Ball M2

8 Rd. Clip M19A1 Box	TAEGE	41,966,592
MLB M19A1 Box	TAEIB	12,788,000
4 to 1 W/T M19A1 Box	TAEIV	14,260,800

Caliber .30 AP M2

8 Rd. Clip M19A1 Box	TAEAD	11,592,960
5 Rd. Clip M2A1 Box	TAEBC	13,631,040
4 to 1 W/T M19A1 Box	TAE EW	13,267,200

Caliber .30 Tracer M25

Carton Pack M2A1 Box	TAEPE	2,348,800
MLB M19A1 Box	TAEPL	95,000
4 to 1 W/Ball M19A1 Box	TAEIV	3,565,200

4 to 1 W/AP M19A1 Box TAEEW 3,316,800

Total Caliber .30 116,832,392

5. Property Disposal.

a. Fifty-two bid openings were attended at United States Defense Corporation and McQuay-Norris Manufacturing Company by the Assistant Property Disposal Officer.

b. In accordance with ORDM 10-1, the following transactions were also accomplished:

(1) Sixty-nine sales, two of which were spot negotiated, were approved by the Assistant Property Disposal Officer, St. Louis Ordnance Plant, Property Disposal Review Board, St. Louis Ordnance Plant, and/or the Property Disposal Review Board, Ordnance Ammunition Command, as required. Total estimated selling price of these sales was \$41,628.82.

(2) One-hundred and thirteen Certifications of Non-Military Property as Non-Repairable were processed, covering eight-hundred and twenty-eight line items. Total acquisition cost of property covered by these certifications was \$755,075.58.

- (3) Eight Destruction Certificates were processed covering material with an acquisition cost of \$9,199.38.
- (4) Thirty-eight hundred purchase orders were spot checked against 3,544 line items appearing on Excess Lists from other installations.
- (5) Forty-eight Excess Lists were forwarded to other Ordnance installations.
- (6) Excess Lists (including Navy) were received and forwarded to United States Defense Corporation: 3,259; and to McQuay-Norris Manufacturing Company: 2,144.
- (7) Nine Requests for Category I Property, and one addendum were processed and approved for local purchase.
- (8) Material listed on 485 Forms GS-36 and 1, Requests for Disposition of Class B or C Property, was inspected and disposition instructions furnished the contractors. (United States Defense Corporation and McQuay-Norris Manufacturing Company.)

6. Inspection.

a. Effective 1 September 1955, Ordnance Inspection was discontinued on the following functions:

- (1) Primer Acceptance Inspection
- (2) Primer Component Inspection
- (3) Acceptance Inspection of Contents of packed containers.

b. Effective 11 October 1955, authority was received from Ordnance Ammunition Command to eliminate the "Container and Overpack" Inspection and to reinstitute "Contents of Container."

c. Effective 1 October 1955, the new Federal Stock Numbers were used for reporting purposes. Effective 9 November 1955, the AIC Symbol was eliminated and the following new Federal Stock Numbers were used on the Ammunition overpacks:

	<u>AIC SYMBOL</u>	<u>FEDERAL STOCK NUMBER</u>
Caliber .30 Ball 8 Rd. Clip	TAEGE	1305-301-1665-A216
Caliber .30 Ball MLB	TAEIB	1305-028-6537-A217
Caliber .30 Ball 4 to 1 W/T	TAEIV	1305-028-6542-A218
Caliber .30 Tracer, Carton	TAEPE	1305-305-0908-A230

d. On 6 December 1955, Tracer powder was changed from Western Cartridge 850 to Western Cartridge 852, starting with Lot SL-7256.

e. Acceptances: The following amount of ammunition and cores were accepted during the reporting period:

(1) Ammunition

(a) Caliber .30 AP M2

July	11,501,632
August	11,448,336
September	11,298,800
October	4,242,432
November	0
December	<u>0</u>
Total	38,491,200

(b) Caliber .30 Ball M2

July	6,730,368
August	6,730,600
September	6,870,912
October	13,726,584
November	17,783,680
December	<u>18,412,032</u>
Total	70,254,176

(c) Caliber .30 Tracer M25

July	1,513,600
August	1,538,000
September	1,519,400
October	1,706,600
November	1,858,600
December	<u>1,206,400</u>
Total	9,342,600

(d) Recapitulation .30 Caliber

	<u>Total Accepted</u>	<u>Accepted on 1st Test</u>	<u>Accepted on Retest</u>	<u>Accepted on Waiver</u>
July	19,745,600	18,740,288	1,005,312	0
August	19,716,936	19,716,936	0	0
September	19,689,112	19,689,112	0	0
October	19,675,616	19,675,616	0	0
November	19,642,280	18,981,280	0	661,000
December	<u>19,618,432</u>	<u>19,618,432</u>	<u>0</u>	<u>0</u>
Total	118,087,976	116,421,664	1,005,312	661,000

(e) Proportion of 1st Test and Retest

1st Test 98.5%

Retest .9%

Waiver .6%

(2) Cores

	<u>.30 AP M2</u>	<u>.30 Ball FAT 21</u>	<u>.50 APIT M20</u>
July	28,500,000	1,000,000	900,000
August	28,500,000	1,000,000	900,000
September	15,735,000	215,000	312,510
October	0	0	0
November	0	0	0
December	<u>0</u>	<u>0</u>	<u>0</u>
Total	72,735,000	2,215,000	2,112,510

f. The quality of .30 Caliber ammunition increased 6.5% during the period. One lot was retested for Velocity and one lot accepted on Waiver for Velocity.

g. The manufacture of .30 Caliber AP M2 ammunition was completed October 1955.

h. The manufacture of all types of cores was completed 19 September 1955.

i. Following is the total small arms ammunition cores manufactured by the Mc-Quay Norris Manufacturing Company under Contract DA 23-196-ORD-1 through 19 September 1955:

.30 Caliber AP M2	2,150,477,594
.30 Caliber AP T93E2 (Light Rifle (NATO)	12,053,500
.30 Caliber Ball T104E2	7,715,000
.30 Caliber API M14	75,286,752
.50 Caliber APTT M20	96,081,046
.50 Caliber Ball	<u>169,245,000</u>
Total	2,510,658,892

7. Fiscal.

a. Contracts administered by this Plant were as follows:

- (1) Contract DA-23-196-ORD-12 is a cost-plus-fixed-fee contract with the United States Defense Corporation for the manufacture of small arms ammunition and rehabilitation. The current value is \$169,800,602.23 broken down into production, \$146,757,651.61 and rehabilitation, \$23,042,950.62. Expenditures made to date are \$135,662,649.83

for production and \$12,731,005.77 for rehabilitation. The basic contract with eighteen supplements thereto includes additional separate projects; such as, caretaker for Helion Spring Ordnance Works, layaway of various buildings, buildings and grounds maintenance for the Shell Division, Engineering Improvement Projects (small arms ammunition), telephone, repairs and utility services for the Core and Shell Divisions and the Army tenant activities located within the Plant area.

- (2) Contract DA-23-196-ORD-1 is a cost-plus-fixed-fee contract with the McQuay-Norris Manufacturing Company for the manufacture of small arms ammunition cores and rehabilitation. The current value is \$57,380,180.16 broken down into production, \$55,287,777.59 and rehabilitation, \$1,792,402.57. Expenditures made to date are approximately \$47,812,612.61 for production and \$1,386,108.75 for rehabilitation. The basic contract with fifteen supplements thereto includes the manufacture of cores for small arms ammunition and rehabilitation of the Core Div-

ision; the installation of equipment for extrusion of cores and the manufacture of cores by the extrusion process; and Engineering Improvement Projects. The production portion of this contract was terminated 30 September 1955. A letter notice of partial termination, dated 31 August 1955, was issued by the Contracting Officer (Ordnance Ammunition Command).

- (3) Contract DA-23-068-ORD-5: This contract was entered into with the General Motors Corporation, Shell Division, on 30 August 1954, for Layaway and Maintenance of Facilities under Power, in the amount of \$1,005,000.00. During the previous reporting period there were two supplemental agreements to the contract. During this reporting period there were two additional supplemental agreements to the contract:

- (a) Supplemental Agreement No. 3, entered into on 2 December 1955, provided for a decrease in the total contract price in the amount of \$2,202.88, due to a voluntary refund by the contractor on the cost of spare parts and the repair

<u>AMMUNITION</u>	<u>JULY-DEC 54</u>	<u>JAN-JUNE 55</u>	<u>JULY-DEC 55</u>
.30 Caliber AP M2	\$82.53	\$77.61	\$84.64
.30 Caliber Tracer	97.82	101.22	111.54
.50 Caliber APIT	293.30	No Production	No Production

CORES

.30 Caliber AP M2	12.05	12.08	12.76
.30 Caliber AP FAT-29	15.23	15.87	No Production
.30 Caliber Ball FAT-21	44.99	9.56	No Production
.50 Caliber APIT M20	56.37	52.87	52.71
.30 Caliber Ball T104E2	No Prod.	9.76	10.25
.30 Caliber AP T93-E2	No Prod.	14.51	14.97

d. All production of cores was terminated 30 September 1955.

8. Safety.

a. The Safety Program of the St. Louis Ordnance Plant from 1 July through 31 December 1955 has effected a favorable reduction in the accident frequency rate over the previous six months:

- (1) During this period, this Plant, including three contractors and two tenant activities, worked a total of 4,487,185 man-hours, under high and low risk activities, incurring one lost time injury for a frequency rate of 0.2.
- (2) Military personnel worked a total of 2,701 man days without a lost time injury for the

period 1 July through 31 December 1955.

- (3) During this period a total of 380,825 motor vehicle miles were driven with four reportable accidents for a motor vehicle frequency rate of 1.0, as compared to ten reportable accidents for a motor vehicle frequency rate of 1.5 for last period.

b. During this period three safety surveys were made by the following:

- (1) 25-29 July 1955 - Ordnance Field Safety Office.
- (2) 17-20 October 1955 - Ordnance Ammunition Command.
- (3) 28-30 November, 2 December 1955 - Ordnance Field Safety Office.

c. Mr. C. V. Boehner, Traffic Specialist, Ordnance Ammunition Command, reviewed the motor vehicle Accident Prevention Program and conducted eleven addresses on the subject "Our Motor Vehicle Problem", 14 through 18 November 1955. Included in his agenda were surveys of accident reporting procedures, traffic safety education, driver selection and training and vehicle inspection and maintenance.

d. On 5 November 1955, the United States Defense Corporation, Ammunition Division, completed one full year without a lost time accident. A total of 5,770,196 man-hours were expended without a reportable injury.

9. Security.

a. Security functions for the Plant No. 1 Area,

Ammunition Division, continued during this period by the United States Defense Corporation. As of 31 December 1955, the personnel strength of the Guard Force consisted of 111 guards for this area. Continued reduction in operation resulted in further reduction of the Guard Force personnel. A total of four guard personnel were reduced during this period.

b. The process of moving Department of Defense, Military Personnel Records Center from the Plant No. 2 Area to 9700 Page Boulevard, St. Louis 14, Missouri, resulted in a gradual reduction of guards. A total of three guard personnel were reduced during this period. (Note: The Guard Force assigned to this Area, known as Squad "B", will be eliminated 17 February 1956.)

c. Tyson Area security functions remained unchanged, employing 24 guard personnel.

d. Fourteen fire-fighter guards were utilized at Weldon Spring Ordnance Works during reporting period.

e. The Core Division, McQuay-Norris Manufacturing Company employed twenty-three guards, a reduction of two since last reporting period.

f. The Shell Division employed twenty-one guard personnel, which is their standby strength. These guards also perform fire-fighter duties.

g. The following Physical Security Inspections were conducted at this Plant during the reporting period:

July 1955 - Ordnance Ammunition Command

July 1955 - Fifth Army

August 1955 - Inspector General Inspection,
Ordnance Ammunition Command.

10. Industrial Relations.

a. Collective bargaining agreements negotiated between the following contractors and unions were reviewed, analyzed, and approved for reimbursement purposes:

- (1) United States Defense Corporation and
Local 36, Sheet Metal Workers
- (2) United States Defense Corporation and
Local 1, International Brotherhood of
Electrical Workers.
- (3) McQuay-Norris Manufacturing Company and
Local 1, National Brotherhood of Guards
and Watchmen of America.
- (4) McQuay-Norris Manufacturing Company and
Local 1, International Brotherhood of
Electrical Workers.
- (5) McQuay-Norris Manufacturing Company and
District 9, International Association of
Machinists.

b. The strike of Local 1, International Brotherhood of Electrical Workers at the Core Division, McQuay-Norris Manufacturing Company, previously reported as being in progress, was terminated on 15 November 1955. The union agreed to accept

	<u>1 July 1955</u>	<u>31 Dec 1955</u>
United States Defense Corporation		
(Ammunition Division and Welton Spring		
Orinance Works)	2381	1845
McQuay-Norris Manufacturing Company		
(Core Division)	662	249
General Motors Corporation		
(Shell Division)	<u>40</u>	<u>39</u>
Total	3083	2133

ATTORNEY'S REPORT

**DISPOSAL OF 77.79 ACRES OF LAND
LOCATED AT TYSON VALLEY POWDER FARM,
ST. LOUIS COUNTY, MISSOURI**

I, L. Sissel, an attorney, licensed to practice law in the States of Kansas and Missouri, and employed by the Corps of Engineers, hereby certify that I have examined the records in the office of the District Engineer, Kansas City District, Corps of Engineers, regarding title to certain land located at Tyson Valley Powder Farm, St. Louis County, Missouri. The land consists of 77.79 acres, more or less, and is reported to General Services Administration for disposal in accordance with existing regulations. A legal description, with a map of the land to be disposed, is shown in the accompanying report.

The land to be disposed was acquired (with other lands) by the Government in fee simple, by warranty deed from St. Louis County, Missouri, 16 January 1956. The conveyance was made subject to existing easements for roads, highways, railroads, pipe lines and other public utilities as located upon, over and across the land. The date of the final opinion of the Attorney General was 16 May 1956. The tract of land to be disposed is unimproved.

There is no known action, thing or circumstance that has occurred from the date of the acquisition of the property by the United States that has affected or may have affected the right, title and interest of the United States in and to the real property.

There is no known civil or criminal jurisdiction over the land that is peculiar to the property by reason of it being Government-owned land.

The Judge Advocate General, Department of the Army, Washington 25, D. C. is the custodian of the abstract of title and related evidence.



**L. Sissel
Attorney**

**18 July 1961
Date**

Date: 12 July 1961

ST. LOUIS ORDNANCE PLANT
TYSON VALLEY POWDER FARM
77.79 ACRES FOR DISPOSAL

EAST AREA (44.31 ACRES)

DESCRIPTION:

A tract of land situated in the SE $\frac{1}{4}$ of Section 23 and the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 26, Township 44 North, Range 4 East of the Fifth Principal Meridian, St. Louis County, Missouri, more particularly described as follows:

Beginning at a stone at the intersection of the east line of said SE $\frac{1}{4}$ of Section 23 and the south line of United States Survey 985; thence S 84°04' W along said south line of United States Survey 985 to a stone at the southeast corner of that 125-acre parcel surveyed by Elbring Surveying Company of Clayton, Missouri, November, 1942; thence continuing on the last described course, 1083.3 feet to a 4"x4" concrete post; thence continuing on said last described course, 70.3 feet to a point 2 feet easterly of the security fence as now located; thence in a southeasterly direction along and 2 feet easterly of the security fence the following courses and distances: S 2°31' E, 137.32 feet; thence S 3°06'40" E, 50.68 feet; thence S 8°47'20" E, 50 feet; thence S 16°06'10" E, 55.78 feet; thence S 27°48'50" E, 86.58 feet; thence S 36°01'20" E, 725.62 feet; thence S 14°12'30" E to the northerly right-of-way line of U. S. Highway No. 66; thence in a northeasterly direction along said northerly right-of-way line to the east line of said NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 26; thence northerly along the east line of said NE $\frac{1}{4}$ NE $\frac{1}{4}$ to a stone at the northeast corner thereof; thence northerly along the east line of said SE $\frac{1}{4}$ of Section 23 to the point of beginning, containing 44.31 acres, more or less.

Memorandum

Region 6

Kansas City 31, Missouri

TO : MEMORANDUM FOR FILE

Date: July 2, 1962

FROM : Chief, Real Property Division, 6UR

In reply refer to: 6UR

SUBJECT: TYSON VALLEY POWDER FARM
D-Mo-467-A

A meeting was held at the Statler Hotel in St. Louis at 9:00 a.m., June 19, 1962, for the purpose of attempting to resolve a conflict of interest in the captioned installation. The following were in attendance:

E. Lyle Knight, DHEW
J. Wayne Harrop, GSA
Floyd J. Maynard, GSA
James H. McNary, Chairman, Board of Supervisors, St. Louis County
Wayne C. Kennedy, Acting Park Commissioner, St. Louis County
Col. Van Harpole, Director of Civil Defense, St. Louis County
Robert McAuliffe, Budget Director, St. Louis County
Robert Payton, Vice-Chancellor for University Development,
Washington University
Cecil Jenkins, State Agent for Surplus Property, State of Missouri

GSA has received an application for park purposes from St. Louis County and DHEW has received an application from Washington University for educational purposes. Both applications cover the entire surplus facility. The county and the university briefly explained the programs proposed in their respective applications. It was pointed out that the county's application contemplates the use of certain igloos formerly used for powder storage for Civil Defense purposes, and it was stated that this use would not be incompatible with the proposed use for park purposes.

GSA and DHEW representatives advised the county and the university that it would be desirable if the conflicts of interest could be resolved between themselves at the local level. It was further explained that in the event the conflict can not be resolved the decision as to the final award would be made by GSA. The county understands that its application must be approved by the National Park Service and the university understands that its application must be approved by DHEW.

After considerable discussion it was determined that the county and the university would get together and attempt to work out an amicable settlement. This meeting or series of meetings will be held probably during the first half of July. Mr. Payton stated that this could not be accomplished any sooner for the reason that the new Chancellor will not enter on duty until July 2, 1962.

cc:
Assistant Commissioner for Real Property - UR

JWHarrop:sw

OFFICE OF
THE REGIONAL DIRECTOR

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
REGIONAL OFFICE
560 Westport Road
Kansas City, Missouri 64111

October 11, 1963

Your reference:
D-Mo-467-A

Mr. J. Wayne Harrop, Chief
Real Property Division
General Services Administration
2306 East Bannister Road
Kansas City 31, Missouri

Dear Mr. Harrop:

Enclosed are two conformed copies of Quitclaim Deed SA-VI-10 (FY 1964) dated October 2, 1963, transferring 1966.46 acres of land and the improvements thereon, located at the Tyson Valley Powder Farm, St. Louis County, Missouri, to The Washington University, St. Louis, Missouri. This is in accordance with your letter of assignment dated August 13, 1963.

Also enclosed are two conformed copies of an Agreement for Decontamination, SA-VI-10 (FY 1964) "A" pertaining to the transfer.

Thank you for your cooperation in negotiating this transfer.

Sincerely yours,

E. Lyle Knight
E. Lyle Knight, Regional Representative
Division of Surplus Property Utilization

Enclosures



DEPARTMENT OF THE ARMY

PROPERTY OF ST. LOUIS ORDNANCE PLANT TYSON VALLEY MILITARY RESERVATION
ST. LOUIS, MISSOURI

No. 23-023-ENG-451

THIS LEASE, made between the Secretary of the Army, of the first part, and Indianapolis Grain Warehouse Corp., a corporation duly organized and existing under and by virtue of the laws of the State of Indiana, with principal office at Fort Wayne, Indiana, of the second part, WITNESSETH:

That the Secretary of the Army, by virtue of the authority contained in Title 10, United States Code, Section 2667, and for the consideration hereinafter set forth, hereby leases to the party of the second part, hereinafter designated as the lessee for a term of ten (10) years commencing 1 October 1960, or on such other date as the District Engineer, U. S. Army Engineer District, Kansas City, Corps of Engineers, 1800 Federal Office Building, Kansas City 6, Missouri, may determine that the premises herein leased have been rehabilitated or converted by the lessee for commercial warehousing (in which event such date shall be evidenced by a written statement by the District Engineer, which statement shall be attached hereto and become a part hereof) and ending ten (10) years from the date of commencement, but revocable at will by the Secretary of the Army, the following described property for general commercial warehousing purposes, including storage of grain:

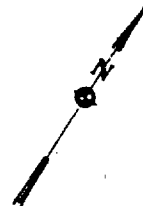
An irregular parcel of land comprising five (5) acres, more or less, lying within the boundaries of the Tyson Storage Area, St. Louis Ordnance Plant, Missouri, including two single-story structures identified as Warehouses Nos. 300-1 and 300-2 and all installed equipment contained therein, together with rail sidings and docks contiguous thereto, situated substantially as shown on Exhibit "A," and more particularly described on Exhibit "B," both attached hereto and by this reference made parts hereof.

THIS LEASE is granted subject to the following conditions:

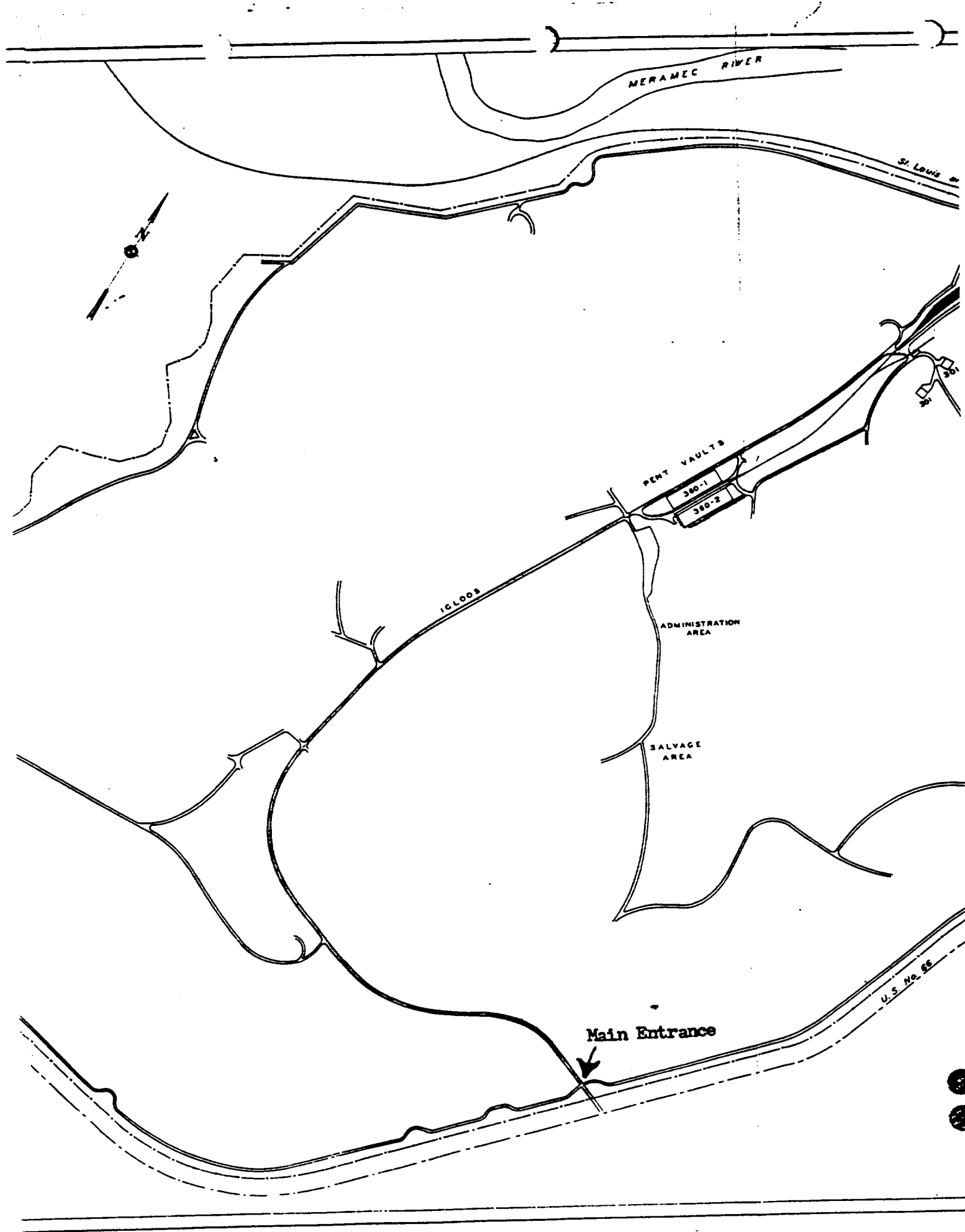
1. That the lessee shall pay to the United States rental in the amount of Twenty-Four Thousand and no/100 Dollars (\$24,000) per annum, payable in equal monthly installments in advance, and the lessee shall also pay to the United States on demand any sum which may have to be expended after the expiration, revocation, or termination of this lease in restoring the premises to the condition required by Condition No. 20 hereof. Compensation shall be made payable to the Treasurer of the United States and forwarded by the lessee direct to the District Engineer, U. S. Army Engineer District, Kansas City, Corps of Engineers, 1800 Federal Office Building, Kansas City 6, Missouri.

4-661

U.S. ARMY



U.S. No. 88



WASHINGTON UNIVERSITY

* * * *

APPLICATION

for

acquisition

of

TYSON VALLEY POWDER FARM

in

St. Louis County, Missouri

Par. 4 - Description of Property (cont)

311	Administration Building
312	Hospital
313	Garage
314-1	Main Gate Guard House
314-2	Gate House
314-3	Gate House
315	Diesel Pump House and Tank
316	Booster Pump House
317	Maintenance Warehouse
318	Electrical Shop
319	Mule Barn
320	Paint Storage Shed
321	Blacksmith Shop
322	Heavy Duty Garage
323	No. 3 Pump House
324	No. 4 Pump House
325	Scale House
326	Recamming House
327	Truck Inspection House
328	Salt and Cold Storage Shed
329-1	Burning Pans (Left)
329-1A	Burning Pans (Right)
329-2	Loading Dock
329-3	Tool Shed
329-4	Personnel Building
329-5	Squibb Building
329-6	Loading Dock
330	Furnace Building
331-1,2	Caves Storage
332	Plumbing Shop
335-1/3	Oil Storage Sheds
336	Loading Dock
336-1	Diesel Fuel Storage
337	Kohler Plant Building
339	Workman Shed
340	Ice House
341	Time Clock
342-1	Pistol Range House
343	Radio Transmitter
344	Firing Station
344-1	Chronograph Building
344-2	Observation Station
344-3	Bullet Trap
344-4	Squibb Shelter
344-5	Shell Container
344-6	TNT Shelter
345-1	Tank at Booster Pump
345-2	High Pressure Tank on Hill
346	Solvent Building
360-1	Warehouse
360-2	Warehouse

Proposed uses of Tyson (continued)

Washington University is ready to assume the responsibility for additional laboratory, dormitory, and storage facilities as they are needed.

Administrative Areas

This application envisages control by the University administration of all central services - water, electricity, heat, power, roads, etc. It also assumes that the University administration - rather than an academic division - will be responsible for the spur tracks and the buildings and facilities in the existing administrative area. (Needs for buildings far exceed those now available. Existing facilities will be assigned on the basis of the initiation of projects requiring administrative, maintenance, and/or office space.)

Assignment of Acreage and Facilities

Each project described in the following pages refer, wherever possible, to the building-by-building, acre-by-acre assignment of land and buildings. Justification for each project's needs will be described at that time.

More generally, facilities and acreages have been assigned on the basis of the following considerations:

- (1) Controlled experiments - e.g., air pollution studies - where conflict with other projects would invalidate findings.
- (2) Topography and resources - e.g., ecological research - where the site is unique because the environment has reverted to a natural state after occupancy by man.
- (3) Facilities - e.g., "igloos" in the germ-free environment studies - where the existing facilities can be directly adapted to research that could not be conducted unless expensive facilities of a similar kind could be built elsewhere.

Washington University plans intensive development of the Tyson Valley tract. Total acreage needs far exceed the acreage available, but we will meet this problem by coordination of all research activities that are not conducted in isolation.

The accompanying map indicates general assignments of acreage and specific assignments where location, topography, water, or other factors are essential.

There is an effort made to indicate on the map the relationship of numerous, quite diverse projects. The general areas to be used by the School of Medicine includes, for example, most of the

APPENDIX D

**HISTORICAL PHOTOGRAPHS
(NOT USED)**

INTERVIEWS

APPENDIX E

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 21 October 1993

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION ALL MISSOURI AND KANSAS SITES		
INCOMING CALL		
PERSON CALLING DAN AHERN	ADDRESS CEMRK-ED-TD	PHONE NUMBER AND EXTENSION 816-426-2608, EXT 3010
PERSON CALLED ROCHELLE ROSS	OFFICE CELMS-PM-M	PHONE NUMBER AND EXTENSION 314-331-8216
OUTGOING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION

SUMMARY OF CONVERSATION:

Dan Ahern returned my call/message from last week.

We discussed all of the St. Louis and Kansas area sites. I asked about Tyson Valley - he said that that is an entirely different site. It was used as a test firing range.

Parsons - In 1947, they disposed of some property.

He found some additional sites which may be affiliated with the St. Louis Ordnance Plant. One site is the NIPR Aluminum Co., which is also known as the McQuay Norris Plant. The site number is either B07MO098200 or B07MO098300.

There are two Cor. Plants in St. Louis. One is located in the Southwest corner of Goodfellow installation and the other is near Forest Park.

He has some INPR's. He is supposed to be in town next week and we may go to the St. Louis Ordnance Plant.

He faxed me information on the St. Louis Ordnance Plant.

Kanani Dekins is no longer in the office. She is on TDY for the next year. Linda Houston (transferred to another district/division) is no longer a contact for the St. Louis Ord Plant. The person who replaced her is Scott Young. Therefor, the main contact for these sites is Dan Ahern.

There is a draft INPR on Rosecrans.

An INPR was completed on the St. Louis Ordnance Plant in 1988, but it was poorly done.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 29 November 1993

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION		
TYSON VALLEY/LONE ELK PARK - TYSON VALLEY		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
Rochelle Ross	CELMS-PM-M	314-331-8784
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
Richard Coles	Director at Tyson Valley	314-935-8430

SUMMARY OF CONVERSATION:

Richard Coles is the Director at Tyson Valley. He has been at the location for 23 years. I asked him if it would be alright if we made a site visit on Wednesday, December 1st. We have an appointment at 10:30.

Their attorney, Susan Hannasch (935-5266) has a file on Tyson Valley. This fill was copied and sent to Rock Island. I called her office and left a message. We will try to get a copy of the file also.

Richard was saying that out of the 52 bunkers and 8 or so vaults, only about 3-4 are empty. The others are used for storage, laboratories, libraries, etc.

The property has been declared "Decontaminated" but about 20 years ago someone was in one of the bunkers with a cigarette. He put it out on the floor. When he did this, crackling and popping noises were heard. The powder was swept and is still stored in a container which is in Richard Cole's possession.

Richard Cole is mainly concerned with the area by the Popping Kettle building. He would like that area cleaned up. He will take us around the property wherever we would like to go.

Part of the area is used as a Bird Sanctuary and another area is a Wolf Sanctuary.

ENCLOSURE

206

DEPARTMENT OF THE INTERIOR

SP-0 10-00422-1

NATIONAL ARCHIVES - KANSAS CITY
R6 270
ST. LOUIS AIRCRAFT - ST. LOUIS OIL
FILE: ST. LOUIS DRG. PLANT

FORMER TYSON VALLEY POWDER FARM

St. Louis County

Missouri

(WA-MO-4B)

(FCA - 6-30)

Prepared by

NATIONAL PARK SERVICE

REGION TWO

DEPARTMENT OF THE INTERIOR

For

United States Department of Agriculture

Farm Credit Administration

Washington 24, D. C.

June - 1949

By:

Park Planners,
George H. Thompson,
Charles A. Jeffers.

Exhibit "H"

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Report on
FORMER TYSON VALLEY POWDER FARM
St. Louis County
Missouri

FOREWORD

The County of St. Louis, a political subdivision of the State of Missouri, acting by and through its Presiding Judge, County Court, exercising its priority right under the Act of Congress approved June 19, 1946 (Public Law 616, 80th Congress), has made application to the Farm Credit Administration, Washington, D. C., to acquire for park and recreational purposes approximately 2,620 acres of land together with betterments at the former War Department installation designated Tyson Valley Powder Farm located about 25 miles southwest of the City of St. Louis in St. Louis County, Missouri.

The property was declared surplus under the provisions of the Surplus Property Act of 1944, as amended, and assigned by the War Assets Administration for disposal with the Department of Agriculture as disposal agency. On September 26, 1947, a contract for the sale of the property was granted the County of St. Louis for a consideration representing the fair value of the property, payable in ten equal annual installments. The application has been submitted with the request by the County of St. Louis that for the existing contract there be substituted a purchase contract for a consideration representing 50 percent of the fair value, in accordance with the provisions of Public Law 616, 80th Congress.

Two copies of the application of the County of St. Louis, dated April 15, 1949, together with supporting documents, were transmitted to the Region Two Office of the National Park Service under date of April 22, 1949, by the Director, Surplus Property Disposal, Farm Credit Administration, Washington, D. C., with a request that the National Park Service Regional Office communicate the result of its investigation in regard to the application to the Director, National Park Service.

Park Planners Charles A. Jeffers and George H. Thompson, of Region Two, National Park Service, Omaha, Nebraska, made an inspection of the Tyson Valley Powder Farm on May 10, 1949. In consultation with representatives of the applicant on April 12 and 13, data were assembled concerning the requesting agency's (a) legal authority, (b) adequacy of finance, (c) experience in park and recreational work, (d) adequacy of staff and operational and administrative experience with similar problems.

This report presents the findings of the studies and investigation, and incorporates as exhibits a plat of the property, Exhibit A; copy of a letter from the authorized agent of the applicant agreeing to certain modifications in the proposed development plan and use program in keeping with suggestions offered by the representatives of the National Park Service who made the investigation, Exhibit B; a print of layout of the administration area, formerly the headquarters area of the powder farm, Exhibit C; and a print of the Master Plan (Preliminary Sketch) on which are shown revisions or modifications in layout which are described in Exhibit D. The report also contains the conclusions arrived at as a result of the investigation, together with a recommended determination.

MAPS AND PHOTOGRAPHS

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City of St. Louis. It further provides for the utilization and protection of scenic values and natural features.

D. Extent of Investigation.

Park Planners George H. Thompson and Charles A. Jeffers of the Region Two Office travelled to St. Louis and with County Planning Engineer M. Eugene Baughman and Clarence Wohlschlaeger, Custodian of the property, spent the entire day of May 10 inspecting the property and the existing facilities located thereon. The most of May 11 and 13 was spent with representatives of the applicant in reviewing the proposed plan of development, including the program of converting the existing facilities and the proposed utilization program. The applicant was also investigated as to legal authority, ability to finance, experience in park and recreational work, and present staff for operating and administering the park areas under its jurisdiction.

County Planning Engineer Eugene Baughman and Custodian Clarence Wohlschlaeger were most helpful in the investigation of the property and its facilities. Mr. Baughman and Judge Luman F. Matthews, Presiding Judge, St. Louis County, supplied information concerning the proposed plan of development, the utilization program, and the responsibility of the applicant. They were also helpful by supplying prints of maps and some of the photographs used in the report.

The proposal was discussed informally with Messrs. Thomas Coward and E. V. Turney of the War Assets Administration and with Mr. T. E. Kircher, of the office of the Park Credit Administration, St. Louis, Missouri, who assisted representatives of the county in preparing their application.

2. The designation of an area of approximately 600 acres in the northeast part of the property to be developed in cooperation with the School Districts of St. Louis County for use as a school camping area in conducting a program of outdoor education in conjunction with the public educational program. As outlined in Item 7, Exhibit B, it is contemplated that the use of this area for school camping purposes will be handled on a seasonal or long term permit basis, the details of which will be worked out between the county and the heads of the School Districts.

3. The designation and development in cooperation with youth camping agencies of an area of approximately 200 acres in the east portion of the property for group camp purposes for use by youth groups such as boy and girl scouts in St. Louis County.

4. The setting aside of approximately 300 acres in the southwest part of the property as a nature study and wildlife area for the use and enjoyment of the residents of St. Louis County and vicinities. This portion of the property is scenically attractive, and it contains some natural features that should be reserved.

5. The designation of an area of approximately 100 acres in the northwest portion of the property for lodge development to provide overnight accommodations and appropriate recreational facilities for the residents of St. Louis County and vicinities who are interested in obtaining this type of accommodation.

In general, the program of utilization provides opportunities for extensive non-urban outdoor recreational opportunities for the large population in St. Louis County and the metropolitan area surrounding the

In addition to the structures listed above which are of the permanent type, there are various small buildings and sheds of temporary construction built by the Army and used for shelters and other purposes in connection with the operation of the area as a powder storage farm.

Following acquisition of the property by St. Louis County, through contract of sale entered into in September 1947, alterations and/or additions have been made to some of the existing structures, and certain recreational facilities have been provided in order that a portion of the area could be made available to visitors. Some of the buildings which comprised the headquarters group of the former powder farm now serve as the administrative group for the park. Accomplishments made to date in converting the facilities for park and recreational purposes are covered in the summary section of the report.

C. Program of Utilization.

In accordance with the proposed plan of development and use, the program of utilization as set forth in the application can be summarized as follows:

1. The development, for intensive outdoor recreational use, of an area of approximately 650 acres in the central portion of the property to serve the needs of at least a portion of the large population residing in St. Louis County and the metropolitan area surrounding St. Louis. The proposed plan of development includes facilities for general picnicking, hiking, horseback riding, possible swimming, group games and other group activities including pageants, children's play areas, and for scenic enjoyment.

Electric System.

30,551 lineal feet of overhead power distribution with transformers.

(3) Structures.

3 warehouses, chemical; solid brick and concrete construction,

Nos. 301-1, 301-2, and 301-3.

4 docks, transfer, Nos. 301 (1-4).

1 tower, firing; steel and concrete. No. 306-1.

1 garage, guard building, and fire station. No. 313.

7,111 sq. ft. floor space.

2 houses, gate, entrance. Nos. 311-1, 311-2.

3 houses, pump.

1 stable, horse (18 head). No. 310.

1 hospital, horse. No. 310-A.

1 building, administration. No. 311.

1 hospital, 2 bed. No. 312.

1 warehouse, maintenance. No. 317.

1 shop, electric. No. 318.

1 stable, mule. No. 319.

52 powder (Igloos) magazines, sod covered. Nos. 303-(1-52) incl.

10 PETN vaults (sod covered). Nos. 306-(1-10) incl.

5 TNT magazines. Nos. 307-(1-5) incl.

Approximately 9.5 miles of fence, link chain, woven wire, with

3 barbed wires, 8 ft. high.

From the tops of the cliffs and hills, broad views may be had of the surrounding country. At the higher points in the northern portion of the property, views extending westward for miles across the Meramec River Valley are possible.

The area contains five natural springs which are reported to have a flow of from 50 to 100 gallons per minute. A stream fed by one of the larger springs flows through the main central valley. At points along this stream signs of erosion were noted. There are no existing stable water areas, although near the northeast corner there is a natural basin, which suggests a possible small lake site.

This former War Department installation, designed, developed, and operated as a powder storage farm during World War II, contains rather extensive improvements and installations. Among them are the following:

(1) Roads and Trails.

Approximately eight miles of waterbound macadam road.

Approximately eight miles of gravel surfaced minor roads.

Several miles of graded fire lanes.

Approximately 3.30 miles of railroad trackage.

(2) Utilities.

Water System.

4 wells with pump (capacity 1780 gal. per hour) with 3554 lineal feet of main and 1631 feet of Service lines.

Sewer System.

900 lineal feet of sanitary and storm sewer lines and 2 septic tanks.

St. Louis County in part of Sections 21, 22, 23, 26, 27, 28, 32, 33, 34, and 35, and part of U. S. Survey No. 985, T. 44 N., R. 4 E. The Surplus Property Disposal Map of the property for which application is made is included in the report as Exhibit A.

B. Description of Property and Facilities.

The former War Department installation now generally referred to as Tyson Valley Park is a tract of approximately 2,620 acres in extent, located just south of the Meramec River in the south portion of St. Louis County. At one place the river comes within about 200 feet of a section of the north boundary. The flat land lying between the property and the river is privately owned. It is used for agricultural purposes. U. S. Highway 66, a major route across the State, bounds the area on the south and east. The St. Louis and San Francisco Railroad adjoins the northeast boundary of the area.

The entire area is hilly with little flat land within the boundaries. There is a difference of about 300 feet between the lowest and highest elevations. For this section of Missouri, it is considered rugged terrain. The property is almost entirely covered with mixed hardwoods--oak, hickory, and walnut predominating. A variety of native shrubs and herbaceous plants form the understory. In the valleys there are some open grass areas. Birds and small game animals are found here. It is reported that a deer was recently seen on the property. Limestone outcrops, some of which form vertical cliffs rising from 50 to 70 feet in height, are to be found at places in the area. A short distance south of the main entrance there is a natural cave. To the northwest there is a large artificial cavern formed by an abandoned limestone quarry.

INTRODUCTION

I. Authority and Purpose.

Public Law No. 616, 80th Congress, Second Session, approved June 10, 1948, amends Section 13 (h) of the Surplus Property Act of 1944 "to provide for the disposition of surplus real property together with improvements located thereon to states, political subdivisions, and municipalities for use as public parks, recreational areas, and historic-monument sites, and for other purposes." It authorizes, with certain restrictions, conveyance of properties suitable and desirable for use as public parks or recreational areas at 50 percent of fair value, and conveyance of properties for historic-monument purposes without monetary consideration.

The authority to make final determination as to whether surplus land is suitable and desirable for use as a public park, public recreational area, or historic monument for the benefit of the public was delegated to the Director, National Park Service, by the Secretary of the Interior, through Order No. 2446, dated June 14, 1948, signed by the Acting Secretary of the Interior.

II. Application.

A. Name of Applicant and Date of Application.

The County of St. Louis, under date of April 15, 1949, acting through its Presiding Judge of the County Court, submitted its application for transfer for public park and public recreational purposes, of a tract of land containing approximately 2,620 acres located in the southwest portion of

RECOMMENDATIONS

From the findings obtained as a result of the inspection of the property and the investigation of the applicant, and from subsequent studies made, it is concluded that:

- (1) The 2,620 acre tract of land located in the south part of St. Louis County Missouri is scenically attractive; that it contains interesting natural features; and that it is suitable for reservation and development for public park and recreational purposes.
- (2) It is located close to a large urban population and that major highways make the area readily accessible.
- (3) Most of the existing improvements of the permanent type in their present state can be converted to park uses, while others proposed for retention can, with some revision, be placed in suitable condition for the uses proposed.
- (4) There is sufficient land for undertaking and carrying out the proposed development plan and use program.
- (5) There is a definite need for additional public park and recreational facilities in the locality.
- (6) The applicant has the legal and administrative authority to acquire the property for the purposes requested.
- (7) The staff of the County Planning Commission, which is the interim agency for providing development, planning, and administration for park and recreational areas for the county is competent to undertake the work, and members of the staff are professionally trained in this work.

equipment has been carried out under his supervision. Two trucks, a tractor with attachments, road grading equipment, fire fighting equipment, and hand tools have been acquired by the county for the property, and, in connection with the accomplishment of certain projects, the applicant stated that both personnel and equipment of the Creve Coeur Lake Memorial Park are made available to the custodian.

Existing legislation enables the County Court to include \$50,000 in its yearly budget for park maintenance purposes. The 1949 county budget provides \$29,120 for administration and operation of the Creve Coeur Lake Memorial Park and Tyson Valley Park.

Senate Bill No. 123, which was introduced in the present State Legislature, will, if adopted, make possible the tax of one mill per dollar of assessed valuation for park purposes. Up to \$350,000 could be realized by St. Louis County for park and recreation purposes from this one mill levy. Latest information relative to the status of this bill indicates that it is being given favorable consideration, and supporters of the bill anticipate its enactment.

The St. Louis County Planning Commission is a ten member advisory group for planning and zoning of the incorporated areas of St. Louis County by authority of House Bill 885, enacted by the Missouri Legislature in 1946. The staff of the commission consists of two planning engineers, four construction inspectors, two engineering draftsmen, and four clerical assistants. Mr. M. Eugene Baughman, the County Planning Engineer, who is also Executive Secretary of the Commission, is a graduate of the School of Landscape Architecture, University of Illinois, in 1941, with a degree in City Planning. The Assistant Planning Engineer, Mr. H. F. Wagner, is also a graduate of the School of Landscape Architecture, University of Illinois. Both were employed by the firm of Harland Bartholomew of St. Louis for periods subsequent to completing their university education. Both Messrs. Baughman and Wagner appear capable and competent, and the staff which is headed by Mr. Baughman appears well organized.

The staff of the County Planning Commission acts as the interim agency for providing development planning and preliminary administration for the Tyson Valley Area, pending the official appointment of a County Park Board and a County Superintendent of Parks. It is proposed that the staff of the Superintendent will include the necessary technicians, together with necessary clerical and subprofessional assistance to carry out the planning, development, maintenance and operation of parks and recreational areas in the county. Mr. Clarence Wohlschlaeger has served as custodian of the property since 1947, and he has had the assistance of two full time male employees. The accomplishments to date in converting facilities for park use and the installation of new park

visitor use during the 1948 recreational season. County officials have reported that during the 1948 season extensive use was made of the facilities provided at the picnic grounds in the vicinity of the administrative group. The saddle horse concession is reported to have had a very good season, also, during the first year. Spot checks made on two Sundays in 1948 showed over 2,000 automobiles entering the main gate on each of the two days. Revenue realized by the county from the concession operators, including the saddle horse concession of approximately 30 horses, and the refreshment stand and dining room in the administration area, averaged \$300 per month for the six months of operation in 1948 (May to October inclusive). The amount realized by the county from the concession operations was ten percent of the gross.

III. Responsibility of Applicant Agency.

The County Court is the administrative agency for the government of St. Louis County. The presiding judge acts in a capacity similar to the mayor of a city, and the assistant judges act in a capacity similar to city aldermen.

The County Court delegated to Luman H. Matthews, Presiding Judge, the authority to negotiate for and execute necessary papers and documents to acquire title to Surplus Federal Real property, together with improvements thereon, for park and recreational purposes. A certified copy of order delegating this authority to Judge Matthews is included in the application.

II. Need for Additional Park and Recreational Areas.

The population within a 25-mile radius of the property is 1,345,000, based on the 1940 census figures. This population is, for the most part, urban.

Except for those areas which comprise the municipal park system of the City of St. Louis and the 15 small neighborhood parks located within incorporated areas in the county (refer to Plate No. 2 in map section of report), there are but two areas developed for park and recreation purposes within St. Louis County. They are the 420 acre Creve Coeur Lake Memorial Park, which is a county park under the jurisdiction of the County Court, and Babler Memorial State Park located near the west edge of the county. The Rockwoods State Reservation consisting of two undeveloped areas is located in the county.

In relation to public demand, the public use areas affording opportunities for park and outdoor recreation purposes within a radius of 100 miles of St. Louis are generally recognized as being inadequate both in size and facilities. It is expected that most visitors to the Tyson Valley Area will be from St. Louis County and the City of St. Louis, although many from the adjoining counties will be attracted to the area by the numerous recreational opportunities which the area offers, and its scenic qualities.

Considerable interest in the area has been shown by the residents of the county and nearby vicinity since September 1947, when the property was acquired for park purposes through an agreement entered into with the United States for its sale. This interest is evidenced by the reported

E. Extent of Lands Required for Recreational Use.

The 2,620 acre tract developed and utilized for park and recreational purposes as set forth in the application will help considerably in meeting a part of the present recreational needs of the metropolitan area lying within its reaches. There appears to be ample room to undertake the proposed use program. It is calculated that when fully developed for the uses proposed its aggregate annual visitor attendance will approximate 600,000.

Officials of St. Louis County have pointed out the need and desirability for acquiring the land between the north boundary of the property and the Meramec River. The acquisition of this land which is contemplated in the development plan would be beneficial in that it will provide access to the Meramec River. It would also provide a level area of considerable size not found within the present limits of the property. The St. Louis and San Francisco Railroad might be a distracting or objectionable feature in that it would necessitate crossing the railroad tracks in order to reach the river from the property. It is possible, however, that overhead or subway crossings could be installed in order to eliminate this potential hazard.

F. Objectionable Features.

There are apparently no objectionable features other than the one referred to in the preceding paragraph unless the location of the storage magazines, or "Igloos", in the principal use area could be considered as being objectionable. In the preceding section of this report it was pointed out that on account of their location and type of construction it was felt that they would prove to be of little distraction.

additional sleeping accommodations. The main building will contain a dining room, lounges, etc. Parking areas, together with other appropriate facilities, and approach road will be provided. This proposed development appears practicable and appropriate in the overall scheme of development, provided it is moderate in scope.

(d) The west portion of the property between U. S. 66 and the trail which runs in an east-west direction along the ridge and past the spring indicated in plan as "Valley Spring" is proposed as a Nature Study and Wildlife Area. The section of the property proposed for development as a roadside tourist area along U. S. 66 is, however, not included in the proposed wildlife area. It appears that this scenically attractive portion of the property should be preserved in its present state, and protection given to native species of birds and other forms of wildlife for the use and enjoyment of visitors and in connection with educational programs for the conservation of natural resources.

The proposed preliminary plan of development as set forth in the application, pages 18 to 22 inclusive (refer to Exhibit A of the application), subject to the modifications as outlined in Exhibit B of this report, appears practicable. The development program as set forth in the application is to be scheduled over a period of ten years. Based on a study of the preliminary master plan, the use program as outlined in the application, and on information supplied by the applicant, it is calculated that from \$350,000 to \$400,000 will be needed to carry out the entire program of development.

Plans for other developments besides those contemplated in the picnic and recreational areas referred to above include the following:

(a) School Camp Area.

The purposes for which this portion of the property, containing about 600 acres, is to be used are outlined quite completely in the application. (Refer to Attachment A(3) of the application.) Instead of the school districts' acquiring title to the property as outlined in the application, it is now proposed that occupancy of this portion of the area by the school districts be handled by a seasonal or long-term permit to be issued by the county. This modification of the application is covered in item 7 of Exhibit B in this report. It is understood that the development of this area will be undertaken jointly by the permitter and the permittee.

(b) Another modification in the proposed plan of development which is set forth in Item 6, Exhibit B provides for a group camp development in the northeast part of the property. This change is noted in red color on the accompanying plan (Exhibit B). It is understood that the development of this area will also be a joint undertaking whereby the Boy Scouts of America and other interested youth camping agencies will participate.

(c) A site on one of the higher elevations in the northwest part of the property which commands a view of the surrounding county has been selected for a lodge development with overnight accommodations. It is understood that proposed tentative plans include a large main building with sleeping rooms, with cabins built in the vicinity to provide

The main entrance gate house No. 314-1, and gate house No. 314-2 which is located along the road at the northeast side of the property, are proposed for retention. The firing tower, building No. 308-1 located along the northeast property line, is also to be retained to be used as an observation tower. All structures proposed for retention are shown in red color on the Preliminary Master Plan (Exhibit D).

In addition to the 1949 allotment of \$24,200 for Tyson Park, a large part of which is for use in converting existing facilities for park use purposes, the county expended in 1948 a like amount for this same purpose. In order to accomplish other work needed to convert existing facilities for park use, it is estimated that an additional \$25,000 will be required.

It is expected that not all of the powder storage magazines will be used in connection with the operation of the area for park purposes, and that those not needed will be left undisturbed in their present locations. These sod covered huts situated near the base of the tree covered slopes which form the walls of the valley in which they are located are not objectionable either as to appearance or location. In some instances their concrete faces are partially obscured from view by young trees which have grown from seed, and with proper planting others can in a very short time be hidden from view. Under the proposed plan of acquisition under Public Law 616, the War Assets Administration will dispose of the railroad trackage for off site use.

The horse hospital, building No. 310-A, is now used as a stable along with buildings Nos. 310 and 319, which were built by the War Department for stable purposes. The corrals have been enlarged to accommodate more horses.

An allotment of \$21,800 is included in the 1949 county budget for Tyson Valley Park. One of the items in the budget in the amount of \$8,000 is for construction of pit type toilets, and another item amounting to \$1,500 is for extension of water lines. This work is to be accomplished in the main picnic area designated as Area No. 1 on the plan. These improvements, together with ovens and table and bench combinations already installed, will place this area in a suitable condition for visitor use. In accordance with the schedule of development, this area is to be completed first, to be followed by picnic areas Nos. 2, 3, 4, 5, and 6, in the order given, as the need for additional facilities occurs. Area No. 5, located beside U. S. 66, is to be developed as a roadside park in cooperation with the Missouri Highway Department. While detail layout plans for the various use areas have not as yet been completed, County Engineer Baughman has indicated that the plans when completed will include areas for outdoor games, shelters, enlargement of the outdoor amphitheatre, children's play areas, and possibly two swimming pools.

The three brick warehouses Nos. 301-(1-3), formerly used for storing chemicals and located in that part of the property proposed for development as a school camping area, are to be retained. One is to be used as a dining hall, one as a medical building, and the third as a recreation building.

Since acquisition of the Property by St. Louis County in 1947 considerable work has been accomplished towards converting the existing facilities. The county has, in addition, provided other facilities including 30 outdoor ovens referred to in its application as "barbecue pits." A total of 100 ovens are scheduled for completion during 1949. Approximately 100 table and bench combinations have also been provided. The outdoor arena and amphitheatre shown in the accompanying plan (Exhibit D) have also been constructed by the county, and some of the buildings in the headquarters area of the former powder farm have been converted for park uses. A print of the plan showing the layout of this area since converting it into an administrative unit is Exhibit C in the report. Views of some of these structures are shown in photos Nos. 16, 17, 18, and 20 found in the map and photograph section. Building No. 313, the largest of the group, formerly a garage, fire station, and guard building, now serves as the administration building. The west end which was formerly used as a garage and for housing fire equipment is now used as food and refreshment room. Table and benches have been placed in this part of the building for use by visitors who obtain refreshments or food at the concession counter. The east end of the building has been converted into a dining room where full course dinners are served. The present capacity of this dining room is fifty. However, it is proposed to increase the capacity to permit serving 100 at one time. The two rooms in the center portion of the building serve as a headquarters for the park custodian. Buildings Nos. 311 and 312 have been converted into residences for employees. Building No. 317, used originally as a maintenance warehouse, is now used as a recreation building. Building No. 318 across the road from No. 317 is now used as a maintenance work shop.

Cedar Hill about 20 miles to the south of Tyson Valley; and the other on the Bourbense River, with the proposed dam site near the town of Union about 30 miles west.

The County Planning Engineer advised that it is planned to set aside desirable sites in other parts of the county for future use as park and recreational areas. Surplus portions of Jefferson Barracks located in the east part of the county are now being considered for acquisition by the county under Public Law 616.

D. Adaptability of Existing Plant.

The existing physical improvements, including roads, trails, utilities, and most of the structures can be used for park purposes in their present condition. Other structures can with moderate expenditure of funds be converted for uses in keeping with the proposed development program. (Refer to the Master Plan, Preliminary Sketch, TVP-1, Exhibit N, modified in accordance with Judge Luman Matthews' letter of May 11, 1949; see also, Exhibit 2.)

Hard surfaced roads shown on plan (Exhibit D) in solid line will serve as the main circulation roads, and visitor travel by automobile will be restricted to them. The gravel surfaced roads also shown on the plan in broken line will be used in connection with the operation and protection of the property. These minor roads can also serve as hiking or horseback trails. Graded fire lanes not shown on the plan will provide suitable routes for either horseback riders or persons travelling by foot.

north part of the county can also reach the property by way of U. S. No. 90 which intersects U. S. No. 66 near the town of Summit, Missouri, approximately 14 miles west of the main entrance to the property. The town of Pacific, Missouri, located on U. S. 66 nine miles west of the property is served by the Missouri Pacific and St. Louis-San Francisco Railroads.

C. Relation to Existing and Proposed Areas.

There is but one area in St. Louis County, namely, Creve Coeur Lake Memorial Park, designated, set aside, and operated as a county park. It is situated on Creve Coeur Lake in the west central portion of the county and contains approximately 120 acres.

The City of St. Louis has a well developed system of public parks, the more important of which are Forest Park and Henry Shaw Gardens. Outside the City of St. Louis but located within incorporated areas in the county are 15 small community neighborhood park areas. (Refer to Plate No. 2 in map section of report.) Babler Memorial State Park and the two undeveloped areas comprising the Rockwoods State Reservation are also located in St. Louis County. Two other state park areas which might be considered as being within the sphere of influence are the Cuivre River State Park in Lincoln County about 140 miles to the northwest and Meramec State Park in Franklin County about 14 miles to the southwest.

The Corps of Engineers flood control plan for the Meramec River Basin includes three reservoirs; one on the Meramec River, the proposed dam site of which is located in the immediate vicinity of Meramec State Park; one on the Big River, with the proposed dam site near the town of

vaults, appear suitable for use in connection with the operation of the property for park and recreational purposes. (Refer to photos No. 16 to 20, inclusive.) Some of the powder storage magazines can perhaps be utilized for storing movable equipment, tools, supplies, and other property used in conjunction with the administration and operation of the area for park purposes. The woven steel fence enclosing the property is an important asset.

B. Location and Accessibility.

Located in the south portion of St. Louis County about 12 miles from the limits of the City of St. Louis, this 2,620 acre tract of land is within convenient reach of a large population comprised for the most part of residents of the Missouri-Illinois metropolitan area which includes the City of St. Louis. The 1940 population of this area, including St. Louis County in Missouri and St. Clair County in Illinois, was 1,257,177 according to census figures. The present population as estimated by the Metropolitan Census Committee is 1,648,000. In addition to this large population, there is a total of 91,454 (1940 census) residing in Jefferson, St. Charles, and Franklin Counties, the three Missouri counties which adjoin St. Louis County. The greater portion of the entire population is within 25 miles of the property. (Refer to map of St. Louis County and Vicinity Map, Plates No. 1 and No. 2 contained in the map and photograph section of the report.)

U. S. Highway No. 66, a major route southwest across Illinois and Missouri, adjoins the property on the south. This route passes through the City of St. Louis. Residents of St. Louis and those living in the

SUMMARY OF FINDINGS

I. Suitability of Site and Facilities.

A. Physical Characteristics.

The tract of land containing 2,620 acres is for the most part hilly, there being but little flat land within its boundaries. There is a difference of about 300 feet between the highest and lowest elevations. Most of the slopes and upper reaches are covered with stands of second growth hardwoods with an understory of native small trees, native shrubs, and fern. In the valleys there are open grass areas. Limestone outcrops add considerably to the attractiveness of the area. In some places the limestone cliffs rise to heights of from 50 to 70 feet. There are five springs, one natural cave, and one abandoned limestone quarry cave on the property. Birds and small game animals are found in the area. A deer was reported seen recently in the area also. Broad views of the surrounding country can be had from the higher elevations. The area in general is scenically attractive and lends itself readily to park and recreational use. It is reported to be one of the most attractive areas in the general region. (Refer to photos No. 1 to 15, inclusive, for views of the area.)

The existing hard surface roads provide an excellent circulating system for visitors who travel to the area by automobile, while the network of gravel roads and graded fire trails will make good foot or bridle trails. The structures of the permanent type listed in Section II-B above, with the possible exception of the powder magazines and storage



Photo No. 18

View of one of the three chemical warehouse buildings, No. 301-1, approximately 100' x 50' (5100 sq. ft.) located in area indicated on Master Plan (Preliminary Sketch), Exhibit "g" for Dumping Area for School Groups. It is proposed that this group of buildings will form the nucleus for the School Group Area, one to serve as a recreation hall, one as a dining hall, and the third for a medical headquarters.



Photo No. 16



Photo No. 17

Views of Garage, Guard, and Fire Station (Building No. 313) converted by County for an administration building. Food and soft drinks concession with picnic tables in west end, Photo No. 16. Large dining room in east end, Photo No. 17. The three buildings visible in distance in Photo No. 16 are frame structures, two of which have been converted into residences for custodian and concession operator, and the other a warehouse which has been converted into a recreation building and used in connection with the saddle horse concession.



Photo No. 14

View of Beaver Spring.



Photo No. 15

Stream from Bluegrass Spring.



Photo No. 12

view showing opening to one of the caves.

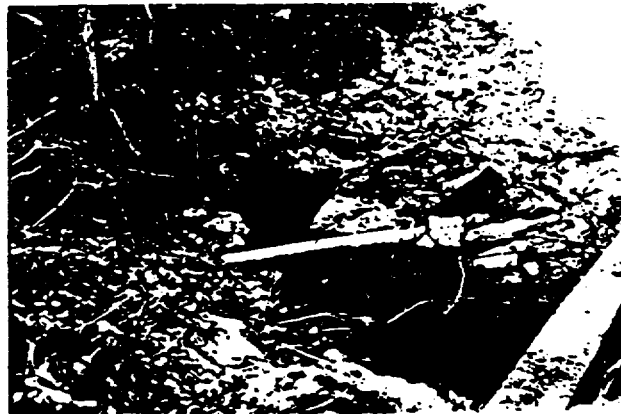
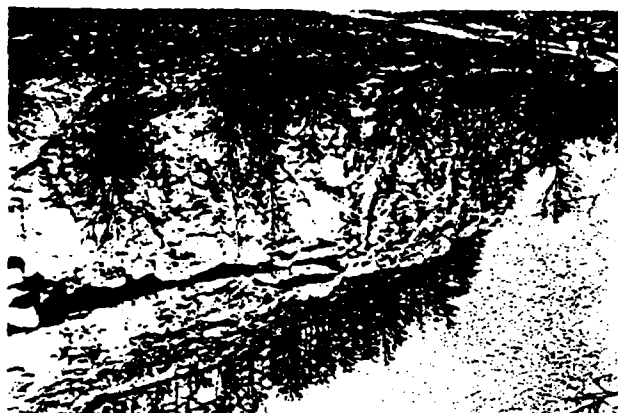
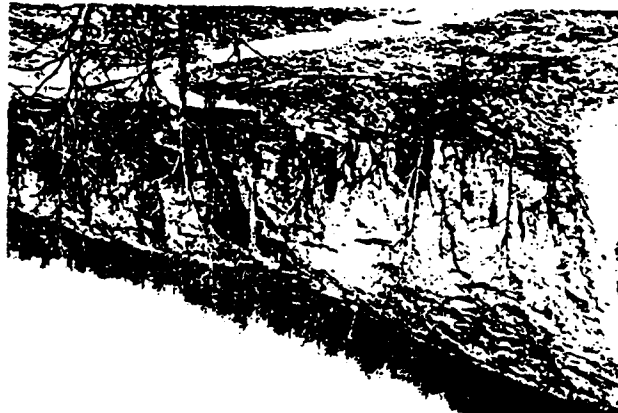
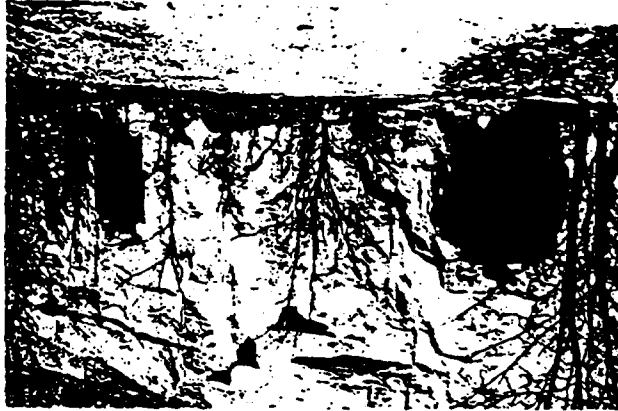


Photo No. 13

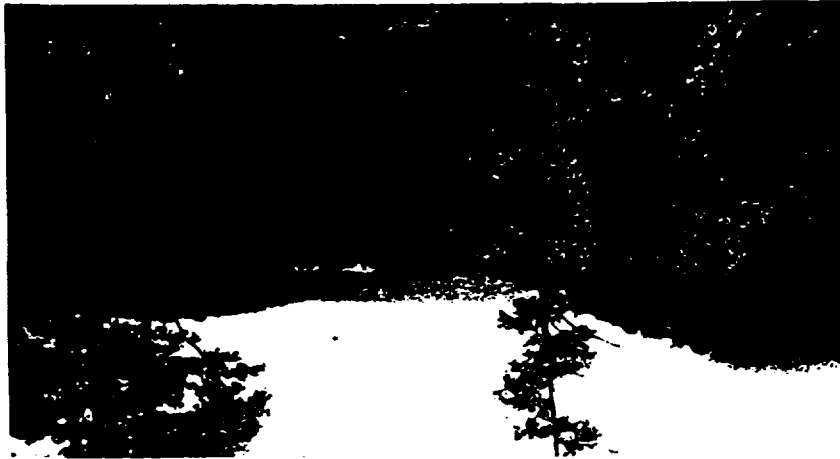
view of "Crescent" ring.

REMARKS: The above is a photograph of the entrance to the tunnel. The entrance is located in the side of a hill. The entrance is a small opening in the rock. The entrance is located in the side of a hill. The entrance is a small opening in the rock.



View taken from elevation near center of area, looking north. Limestone cliffs visible in center background.

Photo No. 6



View to northwest from a point near north-west corner of area, looking across brook. This line between west boundary of property and distance about 35 ft. toward rising railroad in center.

Photo No. 7





note No. 5

Looking west across Meramec Valley from west part of area. Section of woven chain link fence and fire lane inside fence are visible.



note No. 6

Looking northwest through trees from one of the higher elevations. Meramec River visible.



Photo No. 3

Looking southwest from roadway near Piling Tower, Ridge No. 324-1. Showing general character of area. Gravel road along base of wooded tract used for patrol purposes. Observation shed at right:



Photo No. 4

Looking to the east across U. S. No. 66 from elevation near west end of area.



Photo No. 1

Looking south from northeast corner of property showing portion of proposed lake basin, with wooded knolls in background.



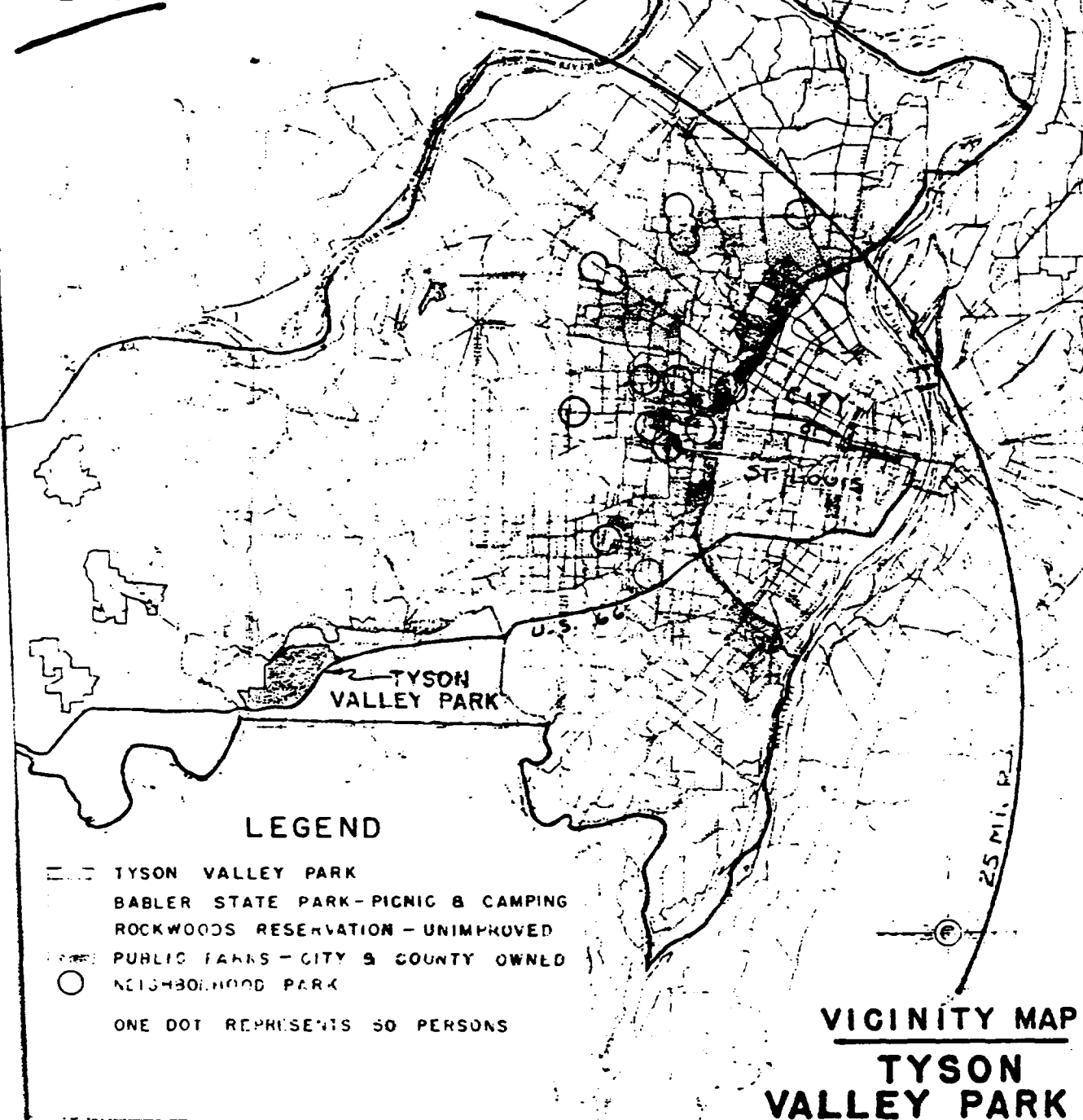
Photo No. 2

View from wooded knoll seen in Photo No. 1, across portion of proposed lake basin to the north. Firing tower No. 3-4-1, proposed for observation tower seen in background. Frame observation station also visible.

SAINT LOUIS COUNTY & CITY MISSOURI

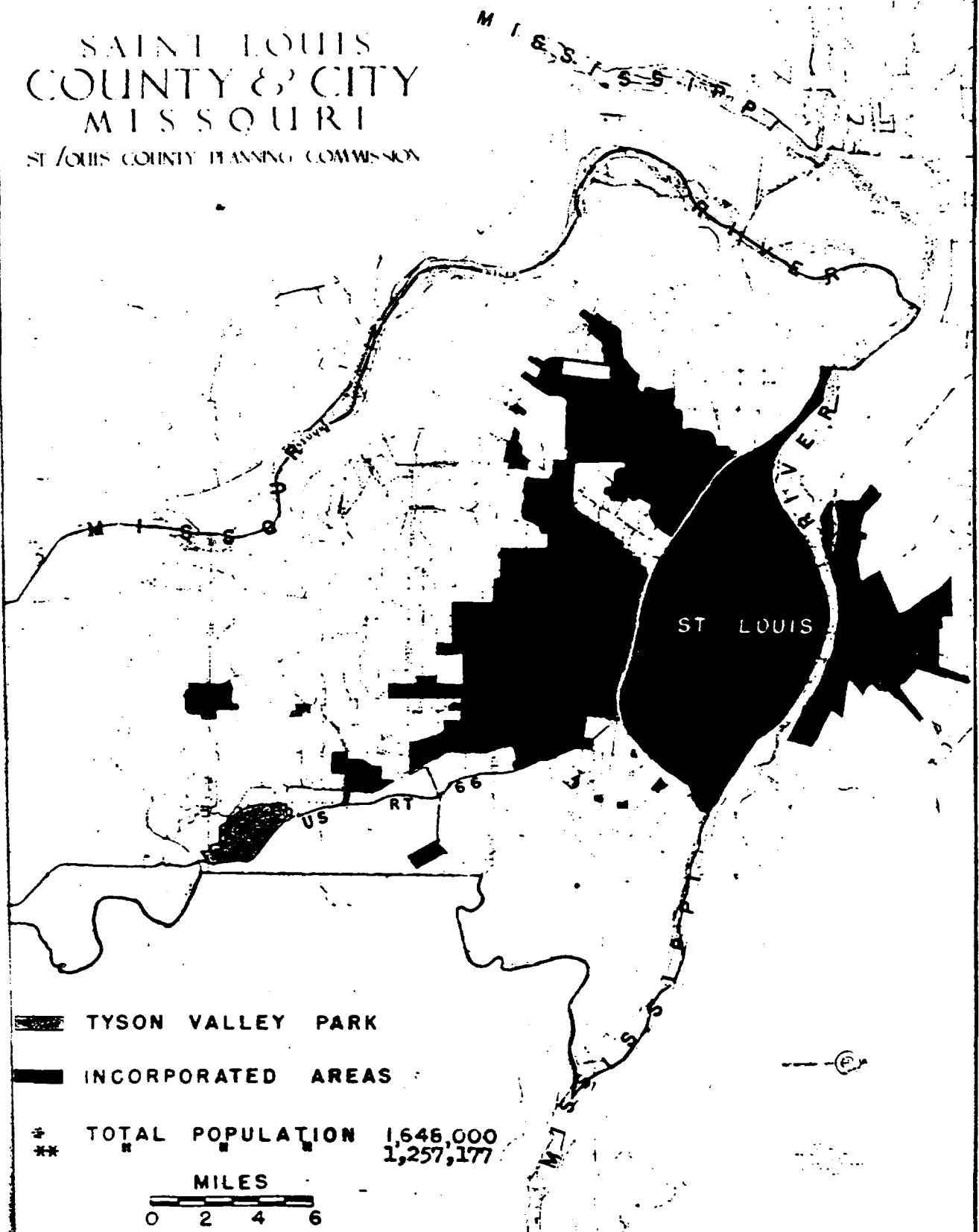
ST. LOUIS COUNTY PLANNING COMMISSION

EXISTING PARK FACILITIES



SAINT LOUIS COUNTY & CITY MISSOURI

ST LOUIS COUNTY PLANNING COMMISSION



* Metropolitan Census Committee's Estimate
** 1940 Census Figures

Regional Director
National Park Service

with their regular school programs under a seasonal or yearly permit which will be issued to the Boards of Education.

8. COUNTY FAIR AREA

The County Fair held in 1947 in the Jefferson Barracks area in St. Louis County, indicated that future County Fairs would be difficult to promote because of the numerous competitive expositions held in the Metropolitan Area such as, The Home Builders Exposition, The Sportsman Show, The Flower and Garden Show, The Horse Show, etc.

Since the above conditions prevail and County Fair activities would not be in keeping with the general character of the park and would cause temporary displacement of routine uses in the park, such a development will be discouraged and the amphitheater area will be used for group sings, school pageants, athletic contests, etc. which will be more desirable.

The County Court is in accord with the above modifications and they will be included in the final draft of the Master Plan which will be adopted by the Court.

Very truly yours,

(Sgd.) Luman F. Matthews
Presiding Judge
St. Louis County Court

MEB/bmk

Regional Director
National Park Service

the entrance road to a distance of approximately 300 feet inside the entrance gate. In so doing, vehicles entering the park from U. S. Highway #66, a heavily traveled highway, will be afforded an opportunity to enter the park without causing undue congestion in traffic on the main highway. It is proposed to erect warning signs along U. S. Highway #66 at advantageous points near the approach to the entrance.

3. FIRE PROTECTION

It is proposed to undertake immediately, a program of rehabilitation of fire lanes constructed by the War Department around the entire property and to maintain existing fire lanes throughout the area in order to reduce fire danger.

4. RELOCATION OF EXISTING BOUNDARY FENCE

It is proposed to relocate the section of fence in the Southwest portion of the area to include that portion of the Tyson Valley property which now lies outside the boundary fence. This area, together with a portion of the Southwest section of the property, located between the gravel ridge trail and U. S. Highway #66, will be set aside for a wildlife reservation to replace the area in the Eastern extremity of the park in the vicinity of the proposed lake designated in the Master Plan (Preliminary Sketch) for a wildlife area.

5. ROADSIDE TOURIST AREA

In connection with the roadside tourist area, it is proposed to relocate the fence in the rear of the area outlined for this particular development. Developments in this roadside area will be coordinated with plans of the Missouri State Highway and Park Commissions. The fence, if relocated in this manner, will provide a barrier between this development and the area designated for wildlife purposes.

6. AREA FOR GROUP CAMP DEVELOPMENT

It is proposed to designate for group camp purposes, the area in the East portion of the park in the vicinity of the proposed lake which is shown on the Master Plan (Preliminary Sketch) as a wildlife area. This development will be undertaken in cooperation with camping agencies throughout the County.

7. SCHOOL CAMP AREA

It is proposed that the area designated for this purpose will be made available to public schools in the County for use in connection

Y
COUNTY COURT OF ST. LOUIS COUNTY
Clayton 5, Missouri
May 14, 1949.

CLAY

Regional Director
Region Two Office
National Park Service
17 Federal Office Building
Omaha 2, Nebraska

Gentlemen:

Following inspection of the Tyson Valley Park area by Park Planners George H. Thompson and Charles A. Jeffers of the Region Two Office, National Park Service, and a review of the proposed plan of development and use program, certain modifications of the proposed plan of development and amplification of the report appear desirable.

The following set forth modifications of the Master Plan (Preliminary Sketch - TVP-1) are those which the County of St. Louis considers desirable and which the County agrees to incorporate in the general development plan for the property.

ROADS

Macadam roads which are shown in solid line on the Master Plan (Preliminary Sketch) were constructed by the War Department for use in connection with the operation of the Tyson Valley Powder Farm. The gravel roads shown on plan in broken line were constructed by the War Department for use in the patrol and protection of the entire area. Under the proposed plan of development for park and recreational purposes, the macadam roads will be open for public use to provide access to the areas where intensive use is contemplated. Barriers are now provided at the intersections of the gravel roads with the macadam roads. It is proposed that these gravel roads will serve only in connection with the administration and protection of the property. They will not be accessible to automobile travel by visitors to the park.

When certain areas proposed for development, including area #4, which is designated in the plan for picnic and recreation purposes, and the proposed lodge are developed, roads providing access to these particular areas will however be opened to the public for automobile travel.

ENTRANCEWAY

In order to provide sufficient room at the entrance of the park area for vehicles during weekend and holiday periods, when it is expected that the attendance will be high, it is proposed to widen

(8) Existing legislation provides sufficient funds for planning, initial developments, and for necessary operation and maintenance purposes.

(9) Senate Bill No. 128, now before the State Legislature will, if enacted, provide ample funds with which to set up a permanent organization to develop and administer parks and recreational areas in the county and for undertaking and completing the development program in accordance with the proposed schedule.

Based upon the above conclusions, it is recommended that favorable consideration be given the application of the County of St. Louis, Missouri, dated April 15, 1949, to acquire for park and recreation purposes the 2,420 acres of land, together with betterments, at the former War Department installation designated Tyson Valley Powder Farm situated in St. Louis County, Missouri, for fifty percent of its fair value, in accordance with the provisions of Public Law 616, 80th Congress.

George H. Thompson,

George H. Thompson,
Park Planner.

Charles A. Jeffers

Charles A. Jeffers,
Park Planner.

Concurred:

(SGD.) GEORGE F. INGALLS

Regional Chief of Land and
Recreational Planning.

Date: JUN 16 1949

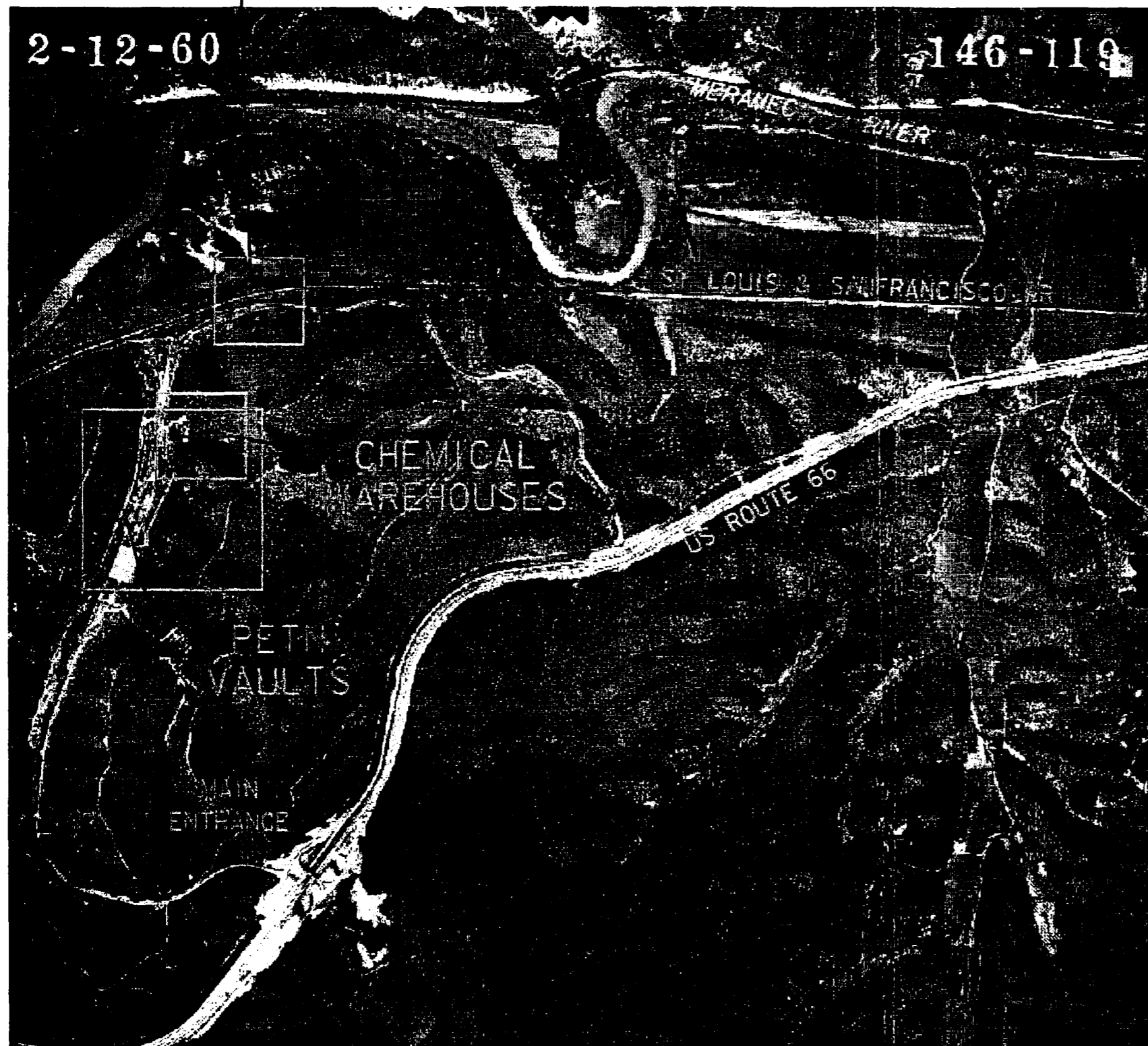
Cleared for Distribution:

(SGD.) LAWRENCE C. MERRIAM

Regional Director.

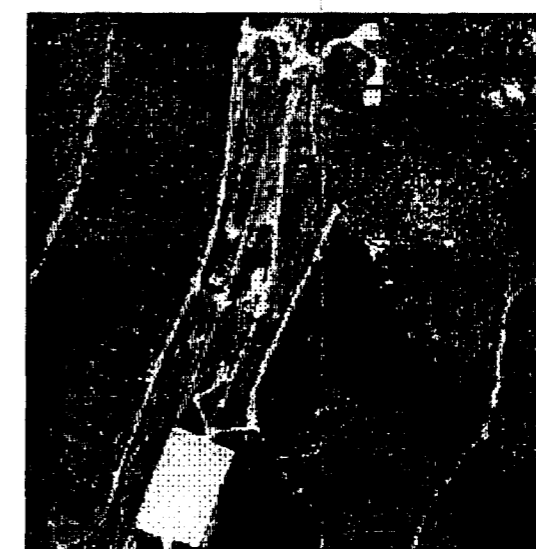
Date: JUN 1 1949

"POPPING KETTLE" CONTAMINATED AREA



"POPPING KETTLE"
CONTAMINATED AREA
SCALE: 1"=1000'

CHEMICAL
WAREHOUSES
SCALE: 1"=1000'



PETN
VAULTS
SCALE: 1"=1000'



SCALE: 1"=2000'

M-2

TYSON VALLEY POWDER FARM AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY
ST. LOUIS, MISSOURI
DERP-FLDS# B07M00173
DERP-FLDS# B07M00179
AERIAL PHOTOS-1960

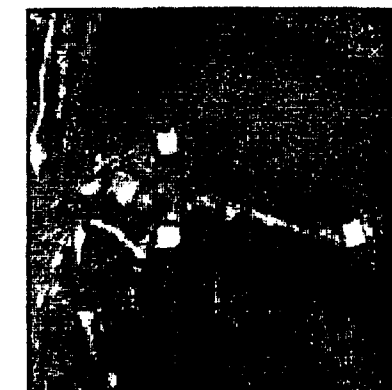
PROJ. DATE: DEC. 1993
24-MAR-1994 1423

DATE OF PHOTO: 1960
SITE200/PHOTO/TYSON0001LONE-TYSON001 2.364 .EXT

"POPPING KETTLE" CONTAMINATED AREA



"POPPING KETTLE"
CONTAMINATED AREA
SCALE: 1"=1000'



CHEMICAL
WAREHOUSES
SCALE: 1"=1000'



PETN
VAULTS
SCALE: 1"=1000'



SCALE: 1"=2000'

M-5

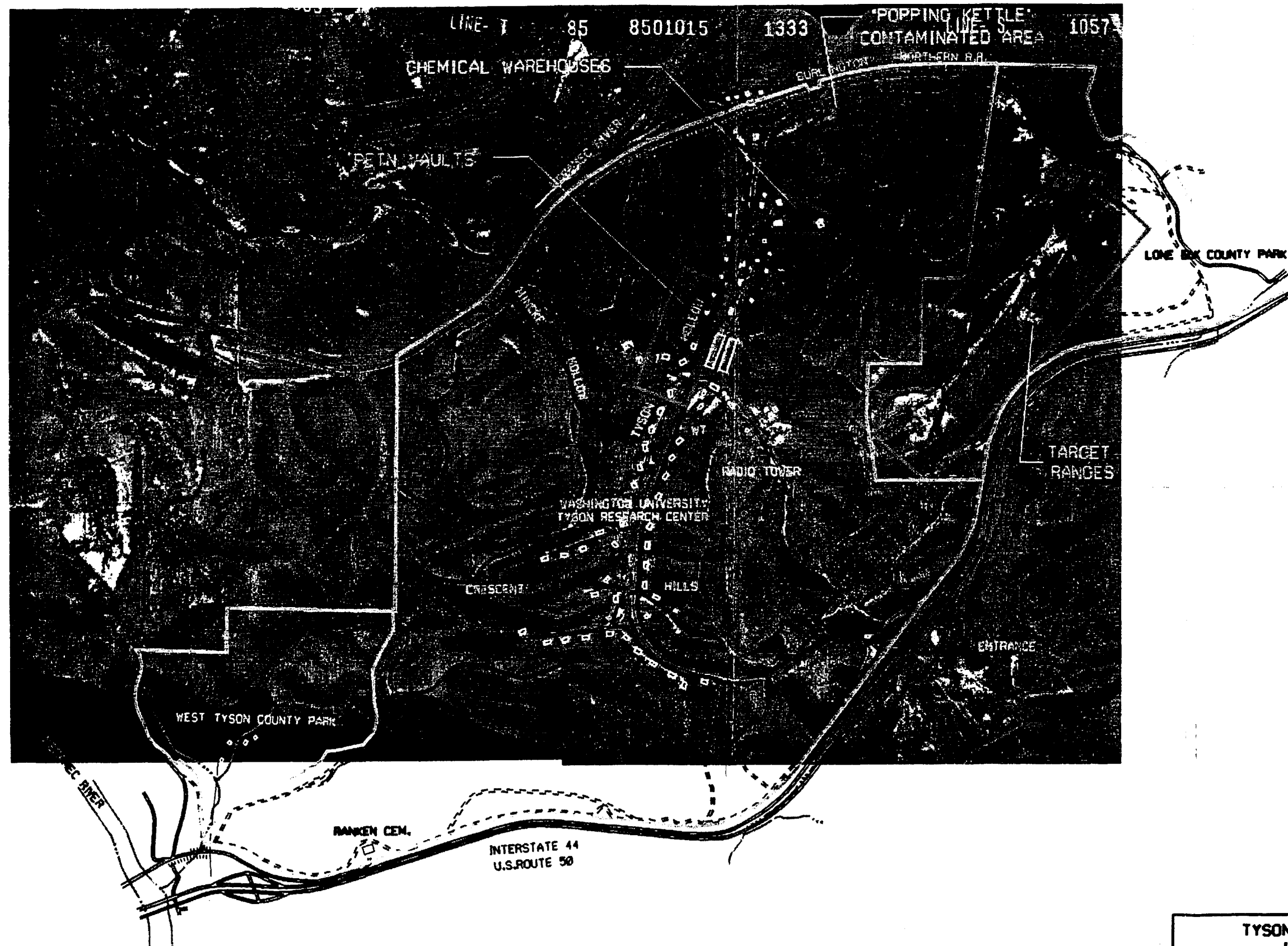
TYSON VALLEY POWDER FARM AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY
ST. LOUIS, MISSOURI
DERP-FUDS# B07M00173
DERP-FUDS# B07M00179
AERIAL PHOTOS-1985

PROJ DATE: DEC. 1993

DATE OF PHOTO: 1985

24-JAN-1994 1452

SITE29/PHTO/TYSONPOWDER-TYSON001_23.64 .EXT



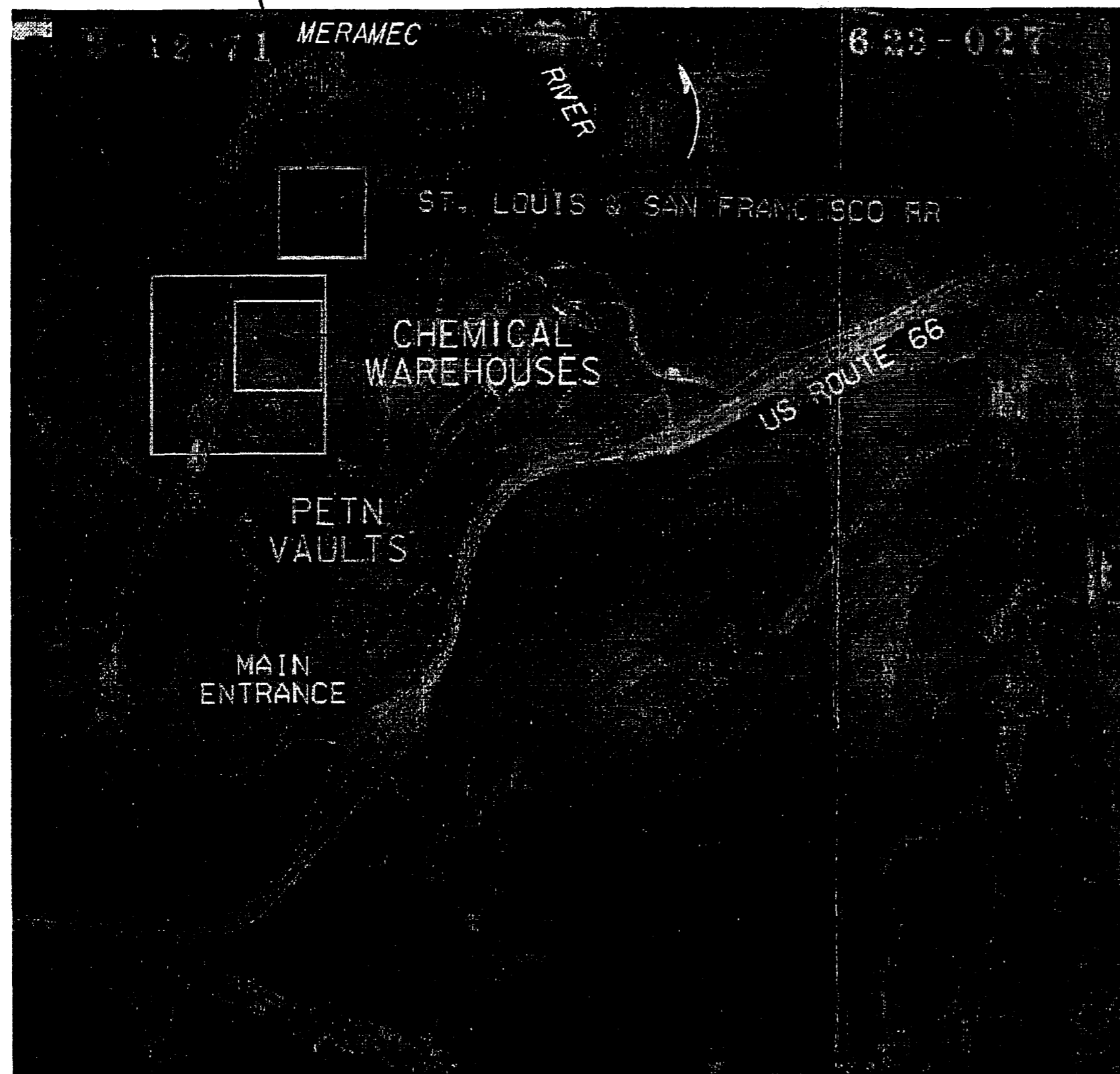
NOT TO SCALE

M-4

TYSON VALLEY POWDER FARM AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY
ST. LOUIS, MISSOURI
DERP-FUDS- B07M00173
DERP-FUDS- B07M00179
AERIAL PHOTO-1985

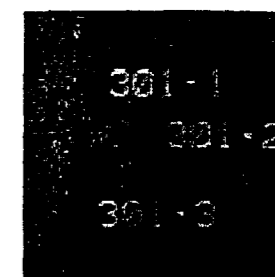
DEC. 1993	DATE OF PHOTO: 1985
194 1446	SITE29/QUAD/TYSON85ADON-TYSH85A & TYSH85B.EXT

"POPPING KETTLE"
CONTAMINATED AREA

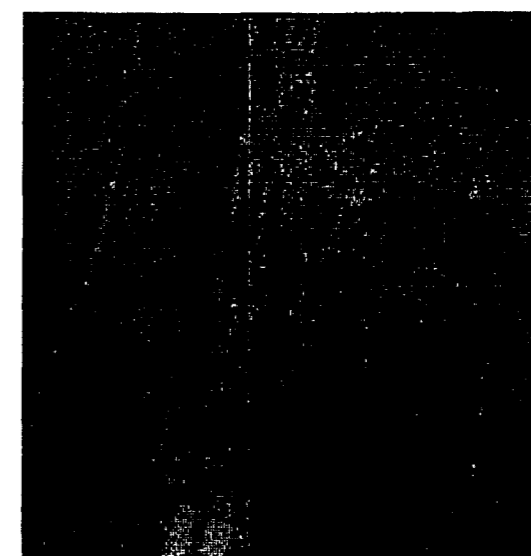


"POPPING KETTLE"
CONTAMINATED AREA
SCALE: 1"=1000'

CHEMICAL
WAREHOUSES
SCALE: 1"=1000'



PETN
VAULTS
SCALE: 1"=1000'



SCALE: 1"=2000'

M-3

TYSON VALLEY POWDER FARM AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY
ST. LOUIS, MISSOURI
DERP-FLDS* B07M00173
DERP-FLDS* B07M00179
AERIAL PHOTOS-1971

PROJ. DATE: DEC. 1993

DATE OF PHOTO: 1971

24-JAN-1994 1433

SITE29R/PHOTO/TYSON/10LDR-TYSON01.23&4.EXT

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
FINDINGS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

MAPS/DRAWINGS

<u>SHEET</u>	<u>DESCRIPTION</u>
M-1	Aerial Photo - 1960
M-2	Aerial Photo - 1960. Potential Contaminated areas highlighted
M-3	Aerial Photo - 1971. Potential Contaminated areas highlighted
M-4	Aerial Photo - 1985.
M-5	Aerial Photo - 1985. Potential Contaminated area highlighted

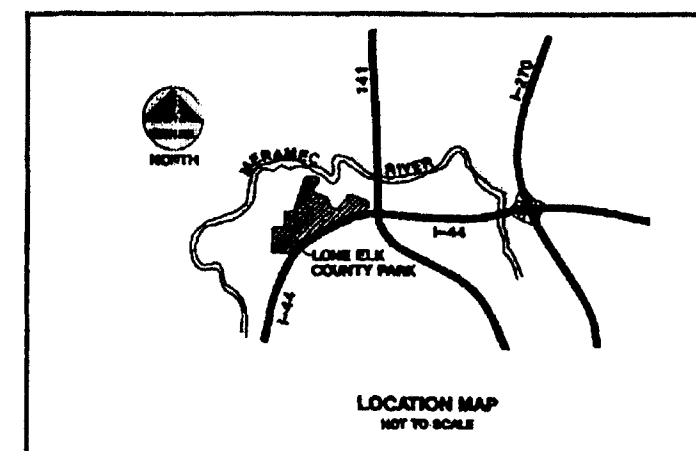
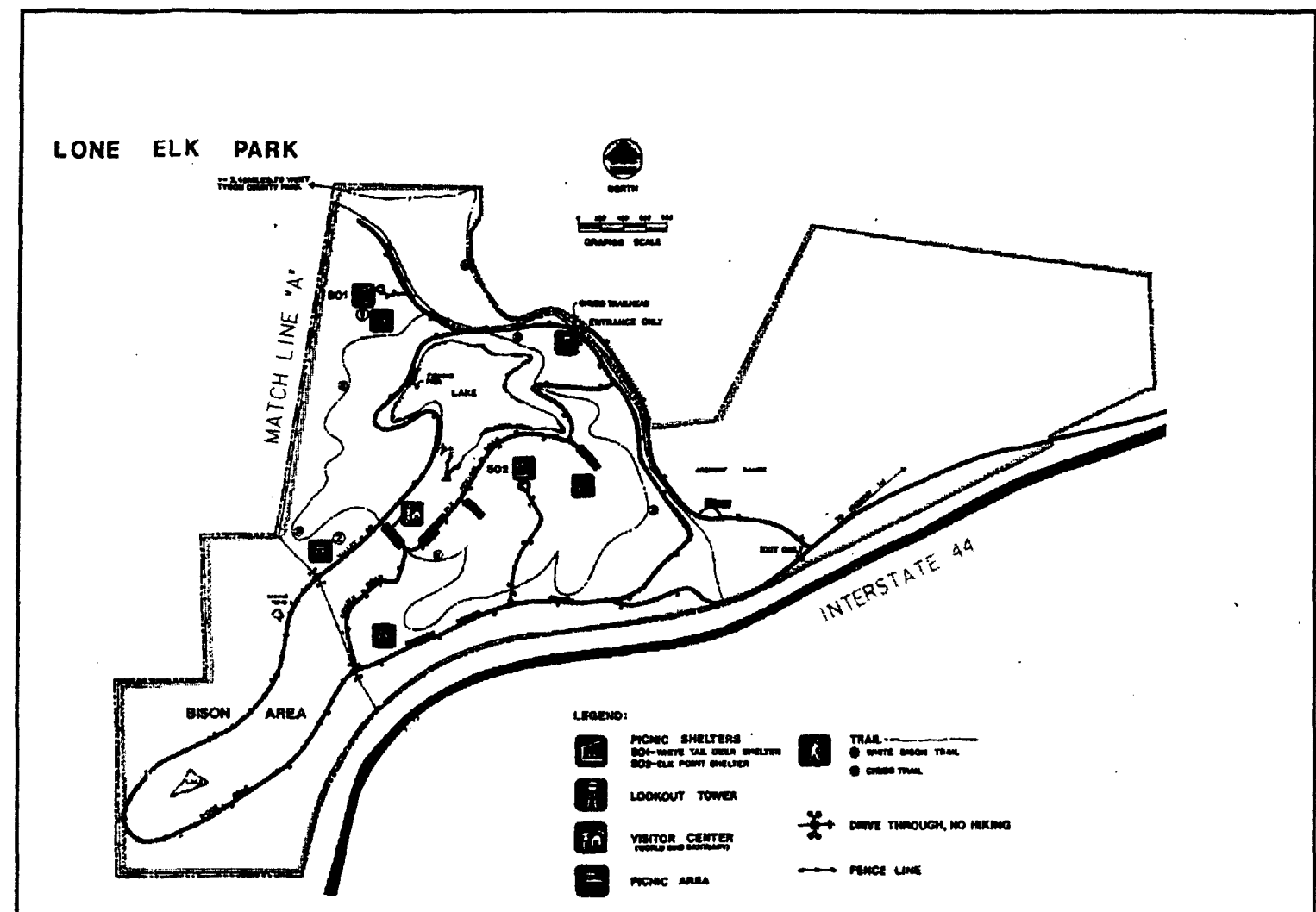
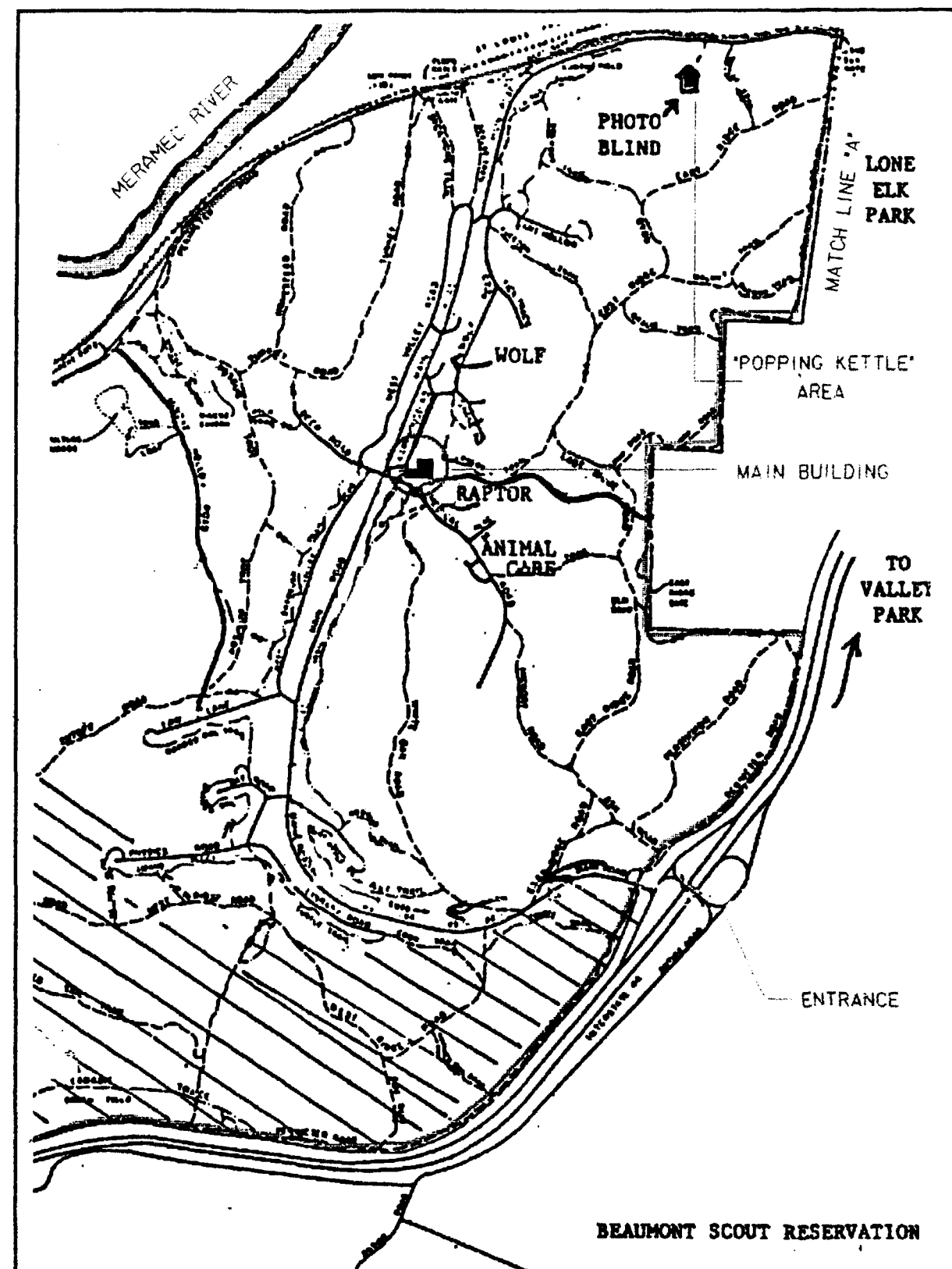


FIGURE 2

TYSON VALLEY POWDER FARM AND
LONE ELK COUNTY PARK
ST. LOUIS COUNTY
ST. LOUIS, MISSOURI
DERP-FUDS* B07M00173
DERP-FUDS* B07M00179
PROJECT LOCATION MAP

PROJ. DATE: DEC. 1994

DATE OF MAP: 1945

24-JAN-1994 15:33

/SITE29R/MAP/TYMAP001.DGN-TYMAP01.028.03.CIT

NOT TO SCALE

APPENDIX A

OEW RISK ASSESSMENT CODE FORM

10 Feb 93

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

TYSON VALLEY POWDER FARM &

Site Name	<u>LONE ELK COUNTY PARK</u>	Rater's Name	<u>Rochelle Ross</u>
Site Location	<u>ST. LOUIS CO., MO</u>	Phone No.	<u>314-331-8784</u>
DERP Project#	<u>B07MO0173 & B07MO0179</u>	Organization	<u>CELMS-PM-M</u>
Date Completed	<u>19 JANUARY 1994</u>	RAC Score	<u>3</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at this site. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter, OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	(6)
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	(1)
Conventional Ordnance and Ammunition (Select the largest single value)	<u>6</u>

What evidence do you have regarding conventional OEW? Small arms
ammunition was stored and fired. 105mm shells (empty) were stored.

B. Pyrotechnics (For munitions not described above)

VALUE

Munition (Container) containing
White Phosphorus or other
Pyrophoric Material (i.e.,
Spontaneously Flammable)

10

Munitions Containing A Flame
or Incendiary Material (i.e.,
Napalm, Triethylaluminum Metal
Incendiaries)

6

Flares, Signals, Simulators

4

Pyrotechnics (Select the largest single value)

0

What evidence do you have regarding pyrotechnics? Incendiary material
was stored, but not in the munitions.

C. Bulk High Explosives (Not an integral part of conventional ordnance;
uncontainerized.)

VALUE

Primary or Initiating Explosives
(Lead Styphnate, Lead Azide,
Nitroglycerin, Mercury Azide,
Mercury Fulminate, Tetracene, etc.)

10

Demolition Charges

10

Secondary Explosives
(PETN, Compositions A, B, C
Tetryl, TNT, RDX, HMX, HBX,
Black Powder, etc.)

(8)

Military Dynamite

6

Less Sensitive Explosives
(Ammonium Nitrate, Explosive D, etc.)

3

High Explosives (Select the largest single value)

8

What evidence do you have regarding bulk explosives? TNT, PETN, and
black powder were stored in bulk at Tyson Valley.

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or
other conventional ordnance; uncontainerized)

VALUE

Solid or Liquid Propellants

6

Propellants

0

What evidence do you have regarding bulk propellants? _____

E. Radiological/Chemical Agent/Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear, incendiary and smoke)	5
Radiological/Chemical Agent (Select the largest single value	<u>0</u>

What evidence do you have regarding chemical/radiological OEW? Tests
for Radiological contamination were conducted. Results were negative.

=====

Total Hazard Severity Value
(Sum of the Largest Values for A through E--Maximum of 61). 14
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Value
CATASTROPHIC	I	≥21
CRITICAL	II	≥10 <21
MARGINAL	III	≥5 <10
NEGLIGIBLE	IV	≥1 <5
**NONE		0

* Apply Hazard Severity Category to Table 3

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Location of OEW Hazards

VALUE

On the surface

(5)

Within Tanks, Pipes, Vessels
or Other confined locations

4

Inside walls, ceilings, or other
parts of Buildings and Structures

3

Subsurface

(2)

Location (Select the single largest value)

5

What evidence do you have regarding location of OEW? Hundreds of shells
are located near the Popping Kettle Building.

B. Distance to nearest inhabited locations or structures likely to be at risk
from OEW hazard (roads, playgrounds, and buildings).

VALUE

Less than 1250 feet

5

1250 feet to 0.5 miles

(4)

0.5 miles to 1.0 miles

3

1.0 miles to 2.0 miles

2

Over 2 miles

1

Distance (Select the single largest value)

4

What are the nearest inhabited structures? Roads, Maintenance Building,
Wolf Sanctuary.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	(2)
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	<u>2</u>
Narrative _____	

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	(3)
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	<u>5</u>
Describe types of buildings in the area. <u>Tyson Valley is now Washington University Research Center.</u>	

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g. in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates, or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 0

Describe the site accessibility. Electrically operated fence at the entrance. A fence surrounds the entire Tyson area.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	0

Describe the site dynamics. _____

=====

Total Hazard Probability Value
 (Sum of Largest Values for A through F--Maximum of 30) 16
 Apply this value to Hazard Probability Table 2 to determine
 Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY		
Description	Level	Value
FREQUENT	A	≥ 27
PROBABLE	B	$\geq 21 < 27$
OCCASIONAL	(C)	$\geq 15 < 21$
REMOTE	D	$\geq 8 < 15$
IMPROBABLE	E	< 8

* Apply Hazard Probability Level to Table 3.

=====

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1 Imminent Hazard - Expedite INPR - Immediately call CEHND-ED-SY--commercial (205) 955-4968 or DSN 645-4968
- RAC 2 High priority on completion of INPR - Recommend further action by CEHND.
- RAC 3 Complete INPR - Recommend further action by CEHND.
- RAC 4 Complete INPR - Recommend further action by CEHND.
- RAC 5 Recommend no further action. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

There are two potential burial sites at Tyson Valley -

(1). located 290 feet north of PETN Vault #1, and (2). between the creek and warehouse building. There is also potential contamination in the Popping Kettle Building area - hundreds of shell casings and several partially buried barrels; one with Cyanide printed on the side. School children and other public groups visit this area often to bird watch.

APPENDIX B
PRESENT SITE PHOTOGRAPHS

**ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
CONCLUSIONS AND RECOMMENDATIONS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI**

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX B

PRESENT SITE PHOTOGRAPHS

Page B-1

**PHOTO #1 - FORMER "POPPING KETTLE BUILDING"; NOW USED AS A
PHOTO BLIND**

**PHOTO #2 - SEVERAL BARRELS LOCATED IN CREEK DOWN FROM THE
"POPPING KETTLE BUILDING"**

Page B-2

PHOTO #3 - BARREL MARKED "CYANIDE" IN CREEK

PHOTO #4 - PILE OF SHELL CASINGS IN CREEK BED

Page B-3

**PHOTO #5 - CREEK FLOWS THROUGH CULVERT AND OFF THE
PROPERTY INTO THE MERAMEC RIVER**

PHOTO #6 - P.E.T.N. VAULT NO. 1 AREA, LOOKING NORTH

Page B-4

PHOTO #7 - P.E.T.N. VAULT NO. 1 AREA, LOOKING SOUTH

PHOTO #8 - P.E.T.N. VAULT NO. 1 AREA, LOOKING WEST



PHOTO #1
FORMER "POPPING KETTLE BUILDING"; NOW USED
AS A PHOTO BLIND



PHOTO #2
SEVERAL BARRELS LOCATED IN CREEK DOWN FROM THE
"POPPING KETTLE BUILDING"

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
CONCLUSIONS AND RECOMMENDATIONS
FOR
TYSON VALLEY POWDER FARM
AND
LONE ELK COUNTY PARK
ST. LOUIS, MISSOURI

DERP-FUDS SITE NOS. B07MO0173 AND B07MO0179

APPENDIX C

REPORT DISTRIBUTION LIST

<u>Addressee</u>	<u>No. Copies</u>
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Commander, U.S. Army Chemical Materiel Destruction Agency ATTN: SFIL-NSM (Vern Skinner), Bldg. E4585 Aberdeen Proving Ground, Maryland 21010	1
Commander, U.S. Army Chemical & Biological Defense Command ATTN: AMSCB-CIL, Bldg. E5183 Aberdeen Proving Ground, Maryland 21010-5423	1
Commander, U.S. Army Corps of Engineers, Kansas City District ATTN: CEMRK-ED-T (Josephine Newton) 700 Federal Building 601 East Twelfth Street Kansas City, Missouri 64106-2896	1
CELMS-ED-G	1
CELMS-ED-H	1
CELMS-PD	1
CELMS-PD-A	1
CELMS-PM	1

APPENDIX C
REPORT DISTRIBUTION LIST



PHOTO #15
FIRING RANGE IN LONE ELK COUNTY PARK



PHOTO #13
AREA NORTH OF BUNKER #52



PHOTO #14
RUST-COLORED SUBSTANCE FLOWING OUT OF SIDE OF CREEK.
POSSIBLE DUMP SITE BETWEEN CREEK AND BUILDING



**PHOTO #11
BURNING TABLE**



**PHOTO #12
BURNING TABLE**



PHOTO #9
CHEMICAL WAREHOUSES

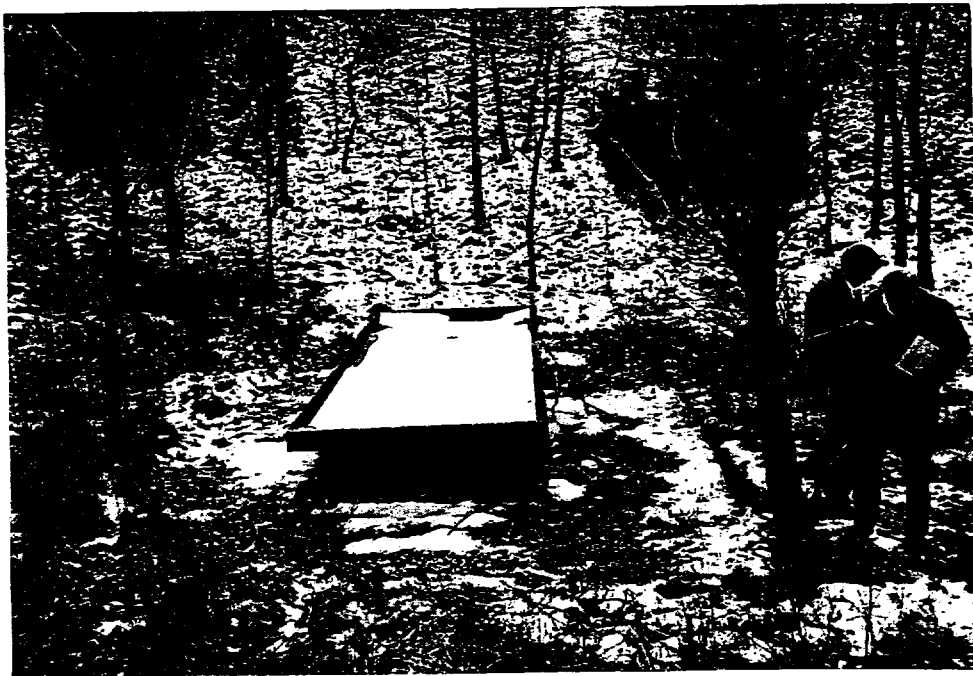


PHOTO #10
BURNING TABLE



PHOTO #7
P.E.T.N. VAULT NO. 1 AREA, LOOKING SOUTH



PHOTO #8
P.E.T.N. VAULT NO. 1 AREA, LOOKING WEST



PHOTO #3
BARREL MARKED "CYANIDE" IN CREEK



PHOTO #4
PILE OF SHELL CASINGS IN CREEK BED



PHOTO #5
CREEK FLOWS THROUGH CULVERT AND OFF THE PROPERTY
INTO THE MERAMEC RIVER



PHOTO #6
P.E.T.N. VAULT NO. 1 AREA, LOOKING NORTH